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REPORTS

FROM

COMMISSIONERS, INSPECTORS,

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FORTY-SEVEN VOLUMES.

— (9.) —

MINES.

Session 1.—5 *February* 1895——6 *July* 1895.
Session 2.—12 *August* 1895——5 *September* 1895.

VOL. XXII.

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FORTY-SEVEN VOLUMES:—CONTENTS OF THE

NINTH VOLUME.

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MINES.

REPORT

OF

W. BEATTIE SCOTT, Esq., H.M. INSPECTOR OF MINES

FOR THE

SOUTH STAFFORDSHIRE DISTRICT (No. 11),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887, the Metalliferous Mines Regulation Acts, 1872 and 1875, and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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1895.

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Mr. W. Beattie Scott's Report.

REPORT upon the INSPECTION of MINES in the SOUTH STAFFORDSHIRE DISTRICT, for the Year ended the 31st December 1894.—By W. BEATTIE SCOTT.

The Farlands, Great Barr, Birmingham,
2nd February 1895.

SIR,

I HAVE the honour to submit to you my annual report upon my proceedings during the year 1894 as the Inspector of Mines in charge of the South Staffordshire Mining District, under Section 43 of the Coal Mines Regulation Act, 1887, and Section 20 of the Metalliferous Mines Regulation Act, 1872.

General review.

The mining boundary has not, upon any side, been extended, and the South Staffordshire coalfield remains isolated from all others, and with no immediate prospect of any enlargement.

I cannot report any increased volume of trade during the year, a very small percentage of the collieries have worked full time; in the black country, where largely manufacturing coal is produced, slackness of demand has prevailed, whilst upon Cannock Chase, in the mines north of the borough of Walsall, extending to Rugeley, whose output depends upon the demand for domestic fuel, the state of trade has been very dull.

There is probably no one cause to which may be traced this slackness of demand, but perhaps the strike of 1893, which seriously disturbed the channels of trade and diverted it, the languishing and diminishing condition of the iron trade in the district and the impossibility, from its inland position, of getting a share in the export trade, are factors in determining and producing such a reduced condition of the output.

With a view to considering the causes of fluctuations of the output of minerals from the district, I have prepared a diagram (No. 1.) which shows at a glance the variations of the quantities of the three important minerals raised.

The diagram of the "Fire-clay" shows a steadily increasing output to the end of the year 1891, and since then a slight depression, which, it is thought, amounts to nothing more than a fluctuation.

The diagram of "Iron-stone," however, shows an entirely different slope, that of a regularly descending one, which, if continued, will end in the extinction of iron-stone mining in the district. I do not know whether economical and commercial conditions will so change as to cause a revival of what is now nearly a lost industry.

PERSONS EMPLOYED in and about the MINES of the SOUTH STAFFORDSHIRE DISTRICT (including those on Sidings at the Pit and on Private Branch Railways and Tramways, and washing or coking Coal), under the COAL MINES REGULATION ACT, during the Year 1894.

Counties.	Underground.			Above-ground.							Total Underground and Above-ground.
	Male Persons.			Ages. 12 to 13.		Ages. 13 to 16.		Above 16.		Total.	
	Ages. 12 to 16.	Ages. Above 16.	Total.	Boys.	Girls.	Boys.	Girls.	Females.	Males.		
South Stafford -	953	17,614	18,567	1	—	503	1	128	5,688	6,321	24,888
Worcester -	99	2,187	2,286	1	—	73	—	37	649	765	3,051
Totals -	1,052	19,801	20,853	2	—	581	1	165	6,337	7,086	27,939

Persons employed.

These figures show, in spite of the dullness of trade, an increase of about 400 more persons employed underground in the mines under the Coal Mines Act, than during the preceding year. I confess I was not prepared for an increase in the number of under-ground workers, and I am at a loss to account for it.

The decrease in the number of women employed upon the pit-banks is remarkable, having fallen from the number of 1,221 so employed in the year 1875 out of a total of surface workers of 9,211, to only 166 females out of a total of 7,086.

QUANTITIES OF MINERAL RAISED at MINES in the SOUTH STAFFORD DISTRICT, under the COAL MINES REGULATION ACT, during the Year 1894.

Counties.	Minerals raised.						
	Coal.	Fire-clay.	Ironstone.	Oil Shale.	Other Minerals.		Total.
					Quantity.	Description.	
	Tons.	Tons.	Tons.	Tons.	Tons.		Tons.
South Stafford -	8,275,897	190,053	31,147	—	668	Pyrites	8,497,765
Worcester	888,646	82,520	7,403	—	—	—	978,569
Totals	9,164,543	272,573	38,550	—	668	—	9,476,334

Output of minerals.

These figures show a very slight improvement upon those of the year 1893, although during that year a gigantic strike paralysed the output of mines upon Cannock Chase, capable of raising nearly one-half of the quantity raised in the whole district, for more than four months. The quantity of coal raised during the year under review was above 800,000 tons less than in 1892.

The quantity of fire-clay raised has decreased for the last three years, having reached its highest point in the year 1891, as will be seen by a glance at the "Output Diagram" on page 4. This industry is, I believe, sensitive to the feeling of depression in the iron trade.

Iron ore mining in this district appears to be doomed. Argillaceous iron ore in nodules cannot be mined at a profit to compete with foreign ores raised where nature has been more liberal. From an output of nearly 400,000 tons in 1875, it has decreased to 38,500 tons in 1894. A glance at the "Output Diagram" will show the downward grade.

The prices of these minerals have likewise shown a downward tendency, except perhaps the price of fire-clay, but the average selling price of coal during the year was at least 6*d.* or 7*d.* below the price of 1893.

Number of mines.

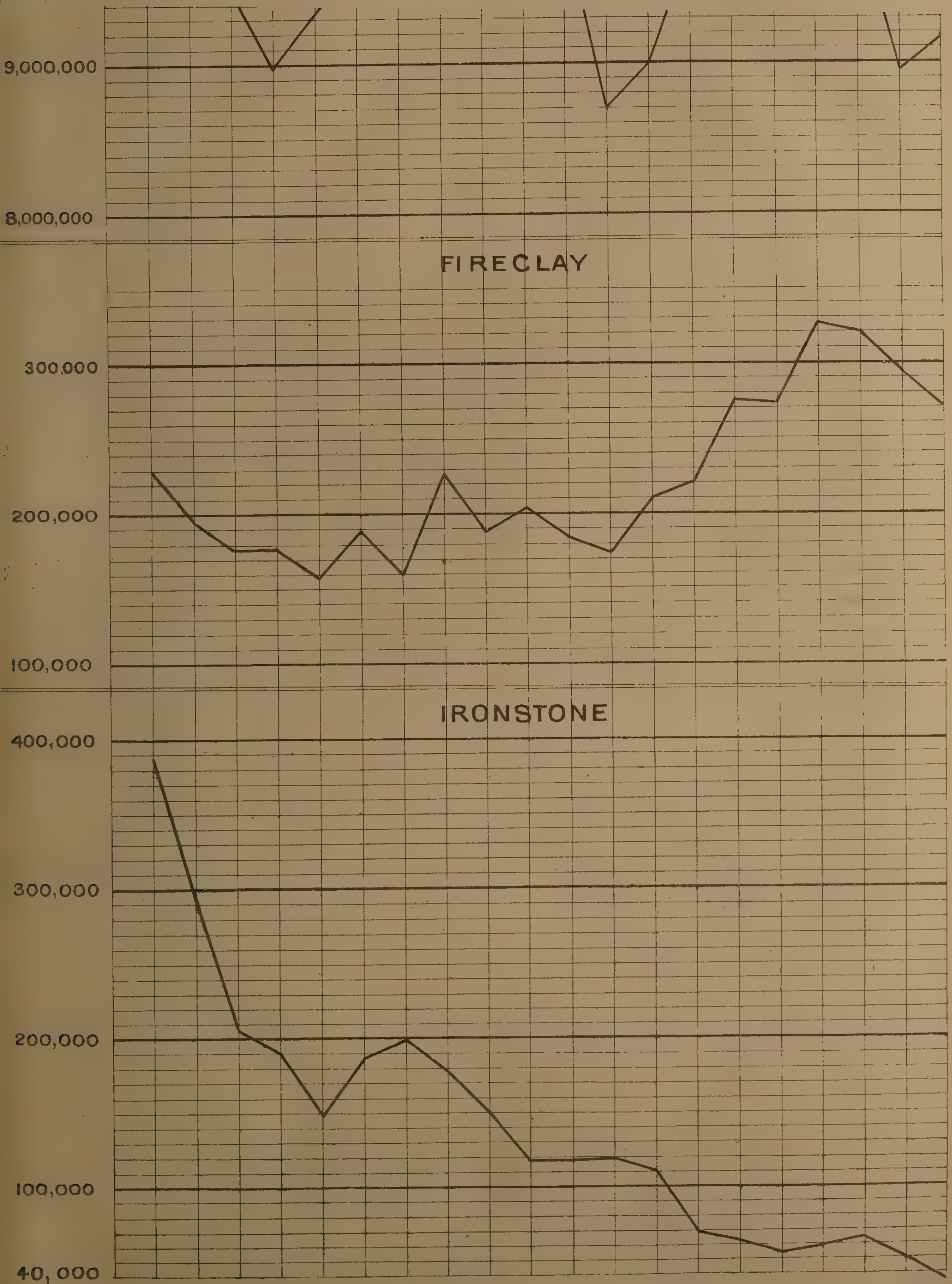
The number of mines which have been at work during the year is 315, whilst upon 58,020 days mineral was raised in these mines, that is, upon very few more days than during 1893, the year of the strike, so quiet has been the condition of trade.

A diagram of fatalities has also been prepared, which for 20 years, from the year 1875, shows the fluctuations of the death rate. During those 20 years the lowest point reached was 29 deaths in the year 1885, rising again in the year 1888 to 51 deaths, and in the year under review to 50 deaths.

To assign a cause for these variations in the number of fatalities is exceedingly difficult, for with increased skill on the part of the officials, with greater knowledge on the part of the workpeople and with better discipline, lessened numbers of fatalities, it is reasonable to expect, should follow.

FATAL ACCIDENTS and SERIOUS INJURIES in and about the MINES of the SOUTH STAFFORD DISTRICT (including those on Private Branch Railways and Tramways, and in Washing and Coking Coal), during the year 1894, arranged according to causes.

	Explosions of Fire-damp or Coal dust.	Falls in Mine.			In Shafts.									Miscellaneous Underground.									On Surface.					Gross Total.
		Falls of Sides.	Falls of Roof.	Total Falls.	Overwinding.	Ropes and Chains breaking.	Whilst ascending or descending by Machinery.	Falling into shaft from Surface.	Things falling from Surface.	Falling from part way down.	Things falling from part way down.	Msicellaneous.	Total in Shafts.	By Explosives.	Suffocation by Gases.	Irruptions of Water.	Falling into Water.	On Inclined and Engine Planes.	By Trams and Tubs.	By Machinery.	Sundries.	Total {Miscellaneous. {Underground.	By Machinery.	Boilers bursting.	Railways and Tramways.	Miscellaneous.	Total on Surface.	
Fatal Accidents.	5	9	12	21	—	—	2	1	1	2	—	2	8	—	—	—	—	—	5	—	2	7	2	—	2	2	6	47
Deaths from these Accidents.	8	9	12	21	—	—	2	1	1	2	—	2	8	—	—	—	—	—	5	—	2	7	2	—	2	2	6	50
Serious Injuries.	20	24	72	96	—	—	2	1	1	3	—	4	11	5	—	—	—	—	25	3	38	71	4	—	1	16	21	219



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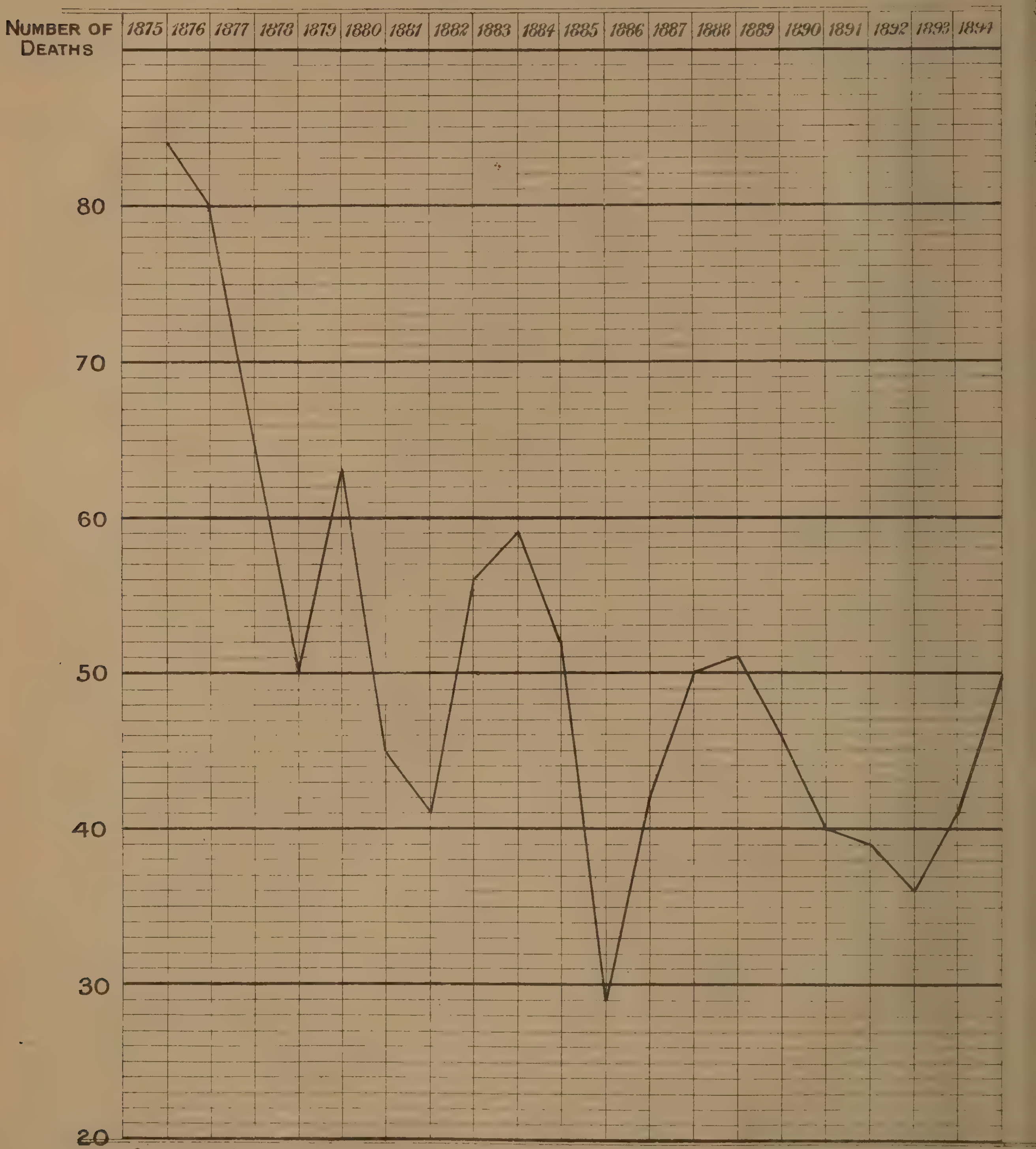
W. Beattie Scott

No. 2. Diagram showing the number of DEATHS from ACCIDENTS in the South Staffordshire District, under the Coal Mines Ac[t] from 1875 to 1894.



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W. Beattie Scott

In this Table can be seen at a glance the causes which have produced the various fatalities. Table of accidents

Explosions of Fire-damp have caused eight deaths and we must look back to the year 1884, when there were 16 deaths from the same cause, for any number of fatalities exceeding this figure, every year having been much below the past year and one, the year 1890, without any death at all from this cause.

One explosion, which occurred in the Sandwell Park Colliery, caused four deaths, the only accident of the year which produced more than one death. It happened in the Thick Coal Seam, which seam, however, does not bear an explosive history.

The next and greatest cause of death in mines is that of "Falls." This cause has produced in this district during the year 1894, 21 deaths, a number sufficiently large when we recall that the years 1892 and 1893 each only produced 14 deaths. To find an increase under this head of 50 per cent. is difficult to account for, especially when it is considered that the work-people of the district have not been exposed to danger, upon the average, more than half time.

Only eight of these deaths occurred in the Thick Coal Seam, which seam at one time bore an unenviable reputation under this head.

Accidents in shafts have caused eight deaths, an exactly similar number to that of the preceding year. Five of these deaths need not have occurred with the exercise of only ordinary caution on the part of the persons killed.

Seven deaths have been classed as from *miscellaneous causes* underground, five of which have been caused by trams and tubs, the movement of which requires great care and caution on the part of the persons engaged therein, owing to the contracted spaces in which they pass to and fro, and the frequent recurring changes of gradient. No death has happened from the use of explosives, which is a matter for congratulation, when the vast number of blasting shots fired during the year is considered.

Six deaths have happened upon *the surface* during the year. Two of them were by machinery, one in a very peculiar way, which is described more in detail in its proper place.

To sum up the result of the fatalities of the year, and to place under each head its relative and comparative value, a table of comparison in averages is subjoined:

1894.	Fatalities in 1894.	Decennial Average.
Explosions	8	2·7
Falls	21	18·4
Shafts	8	4·9
Miscellaneous	7	10·1
Surface	6	3·6
Totals	50	42·4

It will thus be seen that the fatalities of 1894 only show below the decennial average in the case of those under the head of miscellaneous, a result of the year's mining, as measured by the loss of life, much to be regretted.

In continuation of the tale of deaths a list follows, which sufficiently explains itself, showing, as it does, the names of the owners at whose mines accidents have happened, whether resulting in death or injury, together with a more detailed account of the nature of the injuries, with their duration, which account, it is hoped, may be made still more useful in the future.

A List of the Number of Persons Killed and Injured by Accident (distinguishing the Nature of the Injuries) together with the Names of the Owners at whose Mines the Accidents happened, during the Year 1894, in the South Stafford District.

Name of Owner of Mine.	RESULT OF INJURY. Death.	Loss of Right Hand or Arm.	Loss of Left Hand or Arm.	Loss of Part of Right Hand.	Loss of Part of Left Hand.	Loss of any Part of Leg or Foot.	Fracture of Limbs or Bones of Trunk.	Fracture of Hand or Foot.	Loss of Sight of one or both Eyes.	Injuries to Head and Face.	Burns or Scalds.	Lacerations, Contusions, and other Injuries not enumerated.	Duration of Disablement.
													Days.
Albridge Colliery Co.	1	—	—	—	—	—	1	—	—	1	—	2	12 to 91
Addenbrooke and Co.	—	—	—	—	—	—	—	—	—	—	—	4	7 to 42
Ashmore Park Colliery Co.	1	—	—	—	—	1	—	—	—	—	2	1	20 to 39
Barnett, Edward	1	—	—	—	—	—	—	—	—	—	—	2	61 to 210
Bassano and Co.	1	—	—	—	—	—	—	—	—	—	1	1	42 to 126
Black Lake Colliery Co.	—	—	—	—	—	—	1	—	—	—	—	—	119
Bournehills and Withymoor Colliery Co.	—	—	—	—	—	—	—	—	—	—	—	1	23
Bradley and Co., J.	1	—	—	—	—	—	—	—	—	—	—	—	—
Butler, Moses	—	—	—	—	—	—	1	—	—	—	—	3	14 to 56
Cannock Chase Colliery Co.	—	1		Four still off work.			4	—	—	2	2	2	3 to 178
Cannock and Leacroft Colliery Co.	—	—		One still off work.			2	—	—	1	—	3	32 to 83
Cannock Lodge Colliery Co.	1	—	—	—	—	—	1	—	—	—	—	1	14 to 49
Cannock and Rugeley Colliery Co.	—	—		Two still off work		—	1	2	—	1	—	3	21 to 250
Cartwright and Co.	—	—	—	—	—	—	—	—	—	—	—	1	14
Conduit Colliery Co.	1	—		One still off work		—	2	—	—	—	—	4	14 to 329
Cochrane and Co.	—	—	—	—	—	—	1	—	—	—	—	—	98
Coppice Colliery Co.	1	—	—	—	—	—	1	—	—	—	—	1	55 to 138
Cumming, W. G.	—	—	—	—	—	—	—	—	—	—	1	—	16
Dudley, Earl of	6	—	1	—	—	—	6	—	—	1	2	3	21 to 203
Dudley Colliery Co.	1	—		One still off work.			1	—	—	1	—	—	28
Dunn, G. H.	1	—	—	—	—	—	—	—	—	—	1	1	35 to 42
East Cannock Colliery Co.	2	—	—	—	—	—	—	—	—	—	1	1	14 to 56
Ebenezer Colliery Co.	—	—	—	—	—	—	—	—	—	—	—	1	98
Essington Farm Colliery Co.	—	—	—	1	—	—	1	—	—	—	—	1	65 to 190
Evans and Morgan	—	—	—	—	—	—	—	—	—	—	—	2	21 to 28
Evers, S., and Sons	1	—	—	—	—	—	—	—	—	—	—	—	—
Fishley Colliery Co.	1	—	—	—	—	1	2	—	—	—	—	1	21 to 256
Flavell, Love, and Co.	—	—	—	—	—	—	—	—	—	—	—	1	Still off work.
Garratt and Son, S.	1	—	—	—	—	—	1	—	—	—	1	2	16 to 227
Grazebrook, M. and W.	1	—	—	—	—	—	—	Still off work		1	—	1	56
Great Wyrley Colliery Co.	2	—	—	—	—	—	1	—	—	—	—	—	28
Hall End Colliery Co.	—	—	—	—	—	—	—	—	—	—	1	—	30
Hamstead Colliery Co.	—	—	—	—	—	—	7	1	—	1	1	3	7 to 189
Harper and Moores	—	—	—	—	—	—	—	—	—	—	—	2	10 to 21
Harris, W.	—	—	—	—	—	—	—	—	—	—	—	1	93
Harrison, W., Limited	2	—	—	—	—	—	—	—	—	—	—	—	—
Harrison, G. King	1	—	—	—	—	—	—	—	—	—	—	—	—
Harris and Pearson	—	—	—	—	—	—	—	1	—	—	—	—	91
Hawkins, J., and Son	1	—	—	—	—	—	2	—	—	—	1	—	21 to 160
Hawes Hill Colliery Co.	1	—	—	—	—	—	1	—	—	—	—	1	66 to 365
Hayward, W. J., and Co.	—	—		One still off work			2	—	—	—	—	1	56 to 133
Hickman, Alfred	—	—	—	—	—	—	—	—	—	—	—	2	6 to 50
Hingley, Noah, and Co.	—	—	—	—	—	—	—	1	—	—	—	1	6 to 16
Hodson and Saunders	—	—	—	—	—	—	—	—	—	1	—	—	15
Holly Bank Colliery Co.	2	—	1	Still off work			—	—	—	—	—	1	61
Hough, J., and Son	—	—	—	—	—	—	—	—	—	1	—	—	120
Howell, J.	1	—	—	—	—	—	—	—	—	—	—	—	—
Johnson, J.	1	—	—	—	—	—	—	—	—	—	—	—	—
Jones, Thomas	1	—	—	—	—	—		—	—	—	—	—	Still off work.
King Brothers	—	—	—	—	—	—	—	—	—	—	—	1	21

RESULT OF INJURY.

Name of Owner of Mine.	Death.	Loss of Right Hand or Arm.	Loss of Left Hand or Arm.	Loss of Part of Right Hand.	Loss of Part of Left Hand.	Loss of any Part of Leg or Foot.	Fracture of Limbs or Bones of Trunk.	Fracture of Hand or Foot.	Loss of Sight of one or both Eyes.	Injuries to Head and Face.	Burns. or Scalds.	Laceration, Contusions, and other Injuries not enumerated.	Duration of Disablement.
													Days
Kirkham, J. and R.	—	—	—	—	—	—	1	—	—	—	—	—	235
Knowle Colliery Co.	—	—	—	—	—	—	—	—	—	—	—	1	161
Landywood Colliery Co.	—	—	—	—	—	—	—	—	—	—	—	1	28
Mansell and Davies	—	—	—	—	—	—	—	—	—	1	—	2	28 to 120
Minton, Francis	—	—	—	—	—	—	1	—	—	—	—	—	Still off work.
New British Iron Co.	1	—	—	—	—	—	1	—	—	—	—	2	24 to 116
Norton Cannock Colliery Co.	—	—	—	—	—	—	—	—	—	—	—	2	42 to 77
Patent Shaft and Axletree Co.	1	—	—	—	1	—	1	—	—	—	—	1	56 to 126
Pitt, H. S., and Co.	—	—	—	—	—	—	1	—	—	—	—	—	14
Richards and Mansell	—	—	—	—	—	—	—	—	—	1	—	—	18
Rufford and Co.	1	—	—	—	—	—	—	1	—	1	—	—	7 to 14
Sandwell Park Colliery Co.	7	Five still off work.		1	—	—	2	—	—	7	12	8	2 to 134
Shrewsbury, Earl of	—	1	Still off work			—	1	—	—	—	—	3	28 to 36
Southan and Co.	—	—	—	—	—	—	—	—	—	—	—	2	35 to 182
South Stafford Blue Brick Co.	—	—	—	—	—	—	—	—	—	—	—	1	7
Starkey and Co., Limited	—	—	—	—	—	—	—	—	—	1	—	—	30
Timmis and Co.	—	—	—	—	—	—	—	—	—	—	—	1	21
Titford Colliery Co.	—	—	—	—	—	—	—	—	—	—	—	1	56
Wallsall Wood Colliery Co.	1	—	—	—	—	1	—	—	—	1	—	2	99 to 232
West Cannock Colliery Co.	1	Two still off work				—	4	1	—	3	1	2	41 to 188
Williams, Phillips, and Sons.	2	Two still off work				—	2	—	—	1	—	2	49 to 84
Witley Colliery Co.	1	—	—	—	—	—	—	—	—	—	—	—	—
Woodall and Co.	1	—	—	—	—	—	—	—	—	—	—	—	—
Totals	50	2	2	2	1	3	54	7	—	27	27	94	

TABLE showing during which HOURS after the Commencement of the SHIFTS, the FATAL ACCIDENTS happened (including those on Private Branch Railways and Tramways, and in Washing and Coking Coal) in the SOUTH STAFFORD DISTRICT, during the Year 1894.

Underground.													Above-ground.													Total Number of Fatal Accidents.
1st hour.	2nd hour.	3rd hour.	4th hour.	5th hour.	6th hour.	7th hour.	8th hour.	9th hour.	10th hour.	11th hour.	12th hour.	More than 12 hours	1st hour.	2nd hour.	3rd hour.	4th hour.	5th hour.	6th hour.	7th hour.	8th hour.	9th hour.	10th hour.	11th hour.	12th hour.	More than 12 hours	
9	3	3	5	3	8	5	2	2	1	—	—	—	2	—	1	—	—	2	1	—	—	—	—	—	—	47

This table has been drawn up with a view to discover how much truth there is in the contentions that—(1) accidents happened more often in the first hour of the shift, from a neglect of the statutory precautions of an examination of the working places before the workers entered them; and (2) that the accidents happened more often in the last hours of a shift, because the length of shift being too great, they, the workers, became reckless of the necessary precautions. Table of hours of shifts.

A glance at the figures might uphold the first contention to the extent of nine fatalities out of 41, but it is always urged that the necessary precautions were taken, and that the accidents happened in spite of them.

TABLE showing RATIOS of DEATHS from ACCIDENTS in and about the MINES of the SOUTH STAFFORD DISTRICT under the COAL MINES REGULATION ACT, per 1,000 PERSONS employed and per 1,000,000 TONS of MINERAL raised during the Year 1894.

—	Death Rate from Accidents per 1,000 Persons.							Death-rate from Accidents Above and Underground per 1,000,000 Tons of Mineral raised.
	Employed Underground.					Employed Above-ground from all Causes Above-ground.	Employed Above and under-ground.	
	By Explosion of Fire-damp or Coal Dust.	By Falls of Ground.	In Shafts.	Miscellaneous.	From all Causes Under-ground.			
	·384	1·007	·384	·335	2·110	·846	1·790	5·276
The averages for the United Kingdom for 10 years ending 1892.	·319	·998	·190	·502	2·009	·959	1·806	5·654

This comparison of ratios does not admit of any boasting on behalf of the South Stafford coalfield, for it can only be said to have brought itself into line, and as I have said before with regard to the district's own averages, the loss of life has been too high under every head but that of Miscellaneous.

Prosecutions.

Name of District—South Stafford.

Name of Mine.	Description of Offender.	Contravention.	Result of Trial.	Penalty.	Costs.
				£ s. d.	£ s. d.
Summerford	Agent	Section 16 (1) C.M.R.A., 1887.	Conviction	1 0 0	and costs.
"	"	General Rule 1	"	3 0 0	"
"	"	" 4	"	0 10 0	"
Bilston Mill	Owner	Section 8.	"	2 0 0	"
"	"	General Rule 5	"	2 0 0	"
"	"	" 34	"	2 0 0	"
"	"	" *5	Dismissed		
"	"	" *5	"		
Ettingshall	"	Section 34 (1)	Conviction	0 5 0	"
"	"	General Rule 4	"	2 0 0	"
"	"	" 5	"	2 0 0	"
"	"	" *5	Dismissed		
Moseley Hole	"	Section 34 (1)	Conviction	0 5 0	"
"	"	General Rule 5	"	2 0 0	"
"	"	" 1	"	5 0 0	"
"	"	Section 16 (1)	Dismissed		
"	"	General Rule *5	"		
Foxyards	Manager	Section 16 (1*a*)	Conviction	3 0 0	"
"	"	" 16 (1*b*)	"	3 0 0	"
"	"	" 16 (1*b*)	"	3 0 0	"
Millfield	Agent	General Rule 1	"	5 0 0	"
"	"	" 4	Dismissed		
"	Manager	" 1	Conviction	2 0 0	"
"	"	" 4	Dismissed		
Rookery	Owner	Section 35 (3)	Conviction	0 2 6	3 12 6
Brook	"	General Rule 5	"	2 0 0	3 15 6 on payment of costs.
"	"	" 5	"	2 0 0	
"	"	" 33 (each of these three charges repeated).	"	2 0 0	
			Dismissed	-	
Garratt's	Manager	Section 35 (1)	Conviction	2 0 0	2 8 6
Himley	"	" (3)	"	2 0 0	0 8 0

Prosecutions of Workmen by Officials.

Name of Mine.	Description of Offender.	Contravention.	Result of Trial.	Penalty.	Costs.
				£ s. d.	£ s. d.
Cannock and	Stallman	Special Rule 20	Conviction	0 5 0	0 10 0
Leacroft	"	" 20	"	0 5 0	0 10 0
"	"	" 20	"	0 5 0	0 10 0
"	"	" 20	"	—	0 4 6
Brickhouse	Pikeman	" 38	"	1 0 0	0 8 0
Norton }	Stallman	General Rule 12	"	0 10 0	and costs.
Cannock }	Driver	Special Rule 28	"	0 2 6	"
Ashmore Park	Stallman	" 21	"	0 5 0	"
West Cannock	"	" 20	"	1 0 0	0 12 6
"	"	" 20	"	1 0 0	0 12 6
Rowley Hall	Pikeman	" 38	"	2 0 0	and costs.
Hamstead	Horse Driver (2)	" 51	"	0 5 0	0 6 0

The charges in the above list marked with an (*) under General Rule 5 against the owners of the Bilston Mill, Ettingshall, and Moseley Hole Collieries were dismissed by the South Staffordshire Stipendiary, who held with the advocate of the owner of the Moseley Hole Colliery, that under General Rule 5 of the Coal Mines Regulation Act, 1887, only one report is required, and not three reports, (1) machinery, (2) guides, and (3) shafts.

Upon this decision a case was applied for and granted, and upon being argued before the Higher Court the Judges held "that the results of the examinations under the rule must be recorded daily as well as weekly."

Board for Examinations.

This Board held its annual sitting in November, and arranged to hold the yearly examinations on the 12th and 13th of January 1895.

They took place at Mason Science College, Birmingham, when eight candidates for 1st class certificates and 21 for 2nd class certificates presented themselves. The three examiners (Messrs. J. Williamson, W. F. Clark, and J. Davies) satisfied themselves of the efficiency of three for 1st class certificates and of 13 for 2nd class certificates.

The examiners assure me that both the practical and the theoretical knowledge of the candidates for 2nd class certificates is greatly improved, and this fact goes to show that the mining technical classes of the Stafford County Council have done much good. I trust that they will be continued more energetically.

Official Duties.

In addition to the ordinary duties of Inspectors of Mines, I was directed by you to form part of a Departmental Committee to consider the recommendations of the Royal Commission on Mining Royalties. This Committee has held many sittings during the year and has made its report. Further, I have attended several sittings of an arbitration court which is considering the question of a modification and strengthening of the special rules in force in the South Wales District.

The usual work has been carried on, and 643 visits have been paid to mines, 458 of these visits being for ordinary inspection without complaint or accident. Prosecutions have been undertaken and inquests attended. Multifarious other duties have been carried out.

A considerable addition has been made to the duties by the passing of a Quarries Act, which has placed the inspection of quarries which are more than 20 feet deep under the Inspectors of Metalliferous Mines, with their attached factories within a mile of the quarry.

Fatalities.

Explosions of Fire-damp.

These have amounted to eight deaths and 20 injuries. Some of the fatalities are hereafter described in detail.

On the night shift of the 9th August, at five o'clock, two men, named Ashfield and Rollason, had been at work for one hour in the Rowley Hall Colliery, when, for some reason yet unexplained, they left their own working place and wandered about the pit. Now, at

two o'clock of the same day, some fire-damp had been discovered in a certain headway, from which the workmen had been withdrawn and the usual rough and ready fences put up as a warning. These two men appear to have wandered into this place, and, Ashfield leading, fired the explosive gas with his candle, burned his mate, and was suffocated himself by the after-damp, his body not being recovered for two hours. This was a gross breach of rule, and when Rollason had recovered from his burns he was prosecuted by the manager of the mine and fined the full penalty.

No. 41 was the most serious fatality of the whole year, and the only accident which caused more than one death. On the morning of the 27th October, as soon as the men had reached their working places in No.11 District of the Sandwell Park Colliery, the under-manager followed with a fireman to begin his rounds, and, learning from the stallmen that they had made the examination required by the special rule with a safety lamp, and from the fireman that he had made the examination, with a safety lamp, required by the general rule, and that neither examination had discovered the presence of gas, he ordered the fireman to climb a ladder, which was held upright by two men, to examine the condition of the roof with a naked light. He did so, and almost immediately fire-damp burst into flame with no explosive force and filled some of the stalls and roadways. Eleven men were burnt, and one seriously injured through falling when running away. Four of them died. The coroner's jury returned a verdict of accidental death. There was a good current of air circulating through this district, but, in view of the great height of the working places in the Thick Coal Seam (the stall where the explosion occurred was from 15 to 18 feet in height), it is very difficult to deflect the current of air so as to make it sweep the roof of such a place. It is very probable, owing to the rare presence of inflammable gas throughout the mine, that the inspections both by firemen and stallmen had been made in a perfunctory way, and the practice of slinging a safety lamp by its ring at the end of a stick some 15 feet long did not conduce to a more careful performance of this important duty.

No. 43 upon the list shows up a state of indiscipline producing fatal results. At 2.30 p.m. on the 22nd November an explosion of fire-damp occurred in the deep workings of the No. 5 Pit of the Ashmore Park Colliery, and a driver, who was lowering down a gradient of 3 inches to the yard an empty tub, so as to attach it to his horse, was blown with the tub up hill for a distance of 15 yards and dashed against the side of the main level. He was so seriously injured that he died the same night. Two men who had been employed in enlarging an intake airway were also burnt. As the entire pit is worked with safety lamps, there was considerable doubt as to the cause of the explosion until the officials found two safety lamps with the tops detached from the oil cistern, and, of course, the flame had been exposed. These two lamps, together with a third which had not been tampered with, had been served out to the injured men that morning. They had undoubtedly (no one else could have done it without their knowledge) unscrewed the lamp tops and exposed the flame in a gaseous atmosphere, but as no one had seen them do it, the coroner's jury returned a verdict of accidental death. Of course, it may be urged the evidence as to the opening of the lamps is purely circumstantial.

The three other single deaths were caused by burns from the ignition of a small quantity of gas just at the point and time of emission, and they call for no comment.

Falls.

Although this class of fatality has this year amounted to 21, yet I have never been able to say before that so large a proportion as 18 of them occurred where every reasonable precaution had been taken and where no neglect nor rashness had been shown by the workmen.

In only three cases can it be said that a small amount of care and more caution would have saved life. No. 30, which occurred at the Hungary Hill Colliery, need not have happened if the unfortunate man had not left some overhanging top coal unsupported and continued his work under it, until it fell, killing him.

No. 36, at Messrs. Garratt's Himley Colliery, came about through the workman standing in the working face which sloped very much, and allowing the coal which he was pulling off to roll upon himself.

In a similar way No. 44 happened through the brusher standing before the coal which he wished to get down, whilst drawing a sprag.

Shaft Accidents.

No. 4 upon the list was from a strange oversight. Two men were engaged, one a sinker and the other a filler or loader, in a shaft in the Scotwell Colliery. This shaft had been

abandoned some years before and had been filled up with rubbish and these two men were engaged in "cleansing" it (local term for removing the rubbish). It was feared that this rubbish might have been filled in upon the top of a scaffold placed in mid shaft, which might suddenly collapse, moreover the sides of the shaft showed signs of giving way, so these men slung themselves by ropes to staples driven into the wooden curb, some yards above their heads, that in the event of the shaft bottom slipping from under them they would hang safely until rescued. They had only been at work about a quarter of an hour when the side of the shaft gave signs of a collapse, both men jumped into the bowk, signalled to be drawn up, forgetting the ropes by which they were attached to the curb, when these became taut by the ascension of the bowk, they were both jerked out of it and falling to the bottom of the shaft, one was killed and the other badly in injured. Momentary forgetfulness under sudden fear and loss of presence of mind.

No. 15 upon the list. The horse driver of the shaft stage in the Millfield Pit of the Millfield Colliery had brought two full tubs to the shaft-siding, and had returned in-bye about twenty yards with two empty ones, when he heard the cager shout. On going back to the shaft the cager was missing, the cage had gone up the shaft, and a full tub stood on end at the far side of the shaft, as if it had tipped out of the cage when it had began to rise. The cager's body was found in the sump 20 yards below. No one knows what really happened; cage, fences, and signals were all in good order, and both banksman and engineman declare that they received the ordinary signal to raise the cage.

No. 27 happened at the Short Heath Colliery at 7 a.m. on the 8th September, just as work for the day was commencing. Mr. Joseph Johnson, the owner of this small mine, was cleaning out an old shaft and had reached the Heathen Coal on the evening of the 7th September. On the next morning he descended the pit without taking the precaution to lower a light. When near the bottom he shouted "pull up" and immediately fell out of the bowk. The "black damp" was so strong that no one could go down to aid him and in three-quarters of an hour his body was fished out with a noosed rope. This man lost his life through complete disregard of the simplest precaution.

No. 37 occurred on the night repairing shift at Coppy Hall Colliery on the 17th October. A man named John Mills had been sent at the beginning of a shift to repair a road, but finding a large fall to be removed, he returned to the shaft refusing to work, and was allowed to ascend the shaft. When the cage had ascended about three hundred yards, a noise was heard and the body of Mills fell into the sump. It was literally smashed. The shaft, guides, and cages were all in good order and no cause can be assigned for his fall.

No. 42 is another shaft accident. An old man named Thomas Pitt, 79 years of age was acting as night watchman, banksman and gin driver at the Moseley Hole Colliery, whilst two men were at work in the pit. These men heard the sound of a fall in the shaft at 4 a.m. on the 20th November and on going there, they found Pitt's body. He had fallen from the surface a distance of 58 yards. It was found afterwards that the fence which should have been at the mouth of the shaft was not in position. It was manifestly absurd and dangerous, if not illegal, to employ such an old man on such a post.

No. 33 was of a similar character to No. 15, namely, that of falling into the shaft from a mid inset, through some forgetfulness, in this last case of forgetting that the stop blocks were not closed whilst the shaft fence was open. In this connection an automatic fence, or block, is wanted which shall come into action when the cage has left the inset. It is right at this point, with the fatal results of the last two cases in mind, to mention the fortunate escape of a man, named John Martin, at the Brickhouse colliery, near Rowley Regis, who in July fell from a mid inset in the working shaft. He fell a distance of 50 feet, was considerably shaken, and returned to work in five weeks.

Miscellaneous Causes.

No. 6 was a death from a very simple cause. A man, John Price, when wielding his pike in holing, received a severe abrasion on his arm. He returned to work in a week, but was unable to continue, and blood-poisoning supervening, he died within a month. The medical evidence traced his death to this slight wound.

No. 7 was a strange and sudden death. A man, named Hill, was walking out-bye towards the shaft of the Witley Colliery at the end of his day's work with some of his mates, when he stumbled and fell upon the point of a pike which he was carrying. It penetrated his right breast. He died almost immediately, without uttering a sound.

These two cases are all that require special notice under this head, the other five deaths being caused by being crushed by tubs, and in each case it is not too hard a thing to say that, with more care, a life could have been saved.

Fatalities Above-ground.

These have amounted to six. No. 10 upon the list came from a cause which must be somewhat rare. It occurred at the Shut End Colliery in a winding engine house. The engine is a vertical condensing engine. At 1.15 p.m. on the 26th April, the engineman, whilst his engine was lifting a load in the winding shaft, was leaning upon the window sill, whence he could see the pit, with his back to the engine, when suddenly the air-pump rod bent from the perpendicular so much (2 feet 6 inches) that it crushed him against the window sill and so injured him that he died next day. This class of engine has been at work in this colliery for more than 40 years, there are several of them, and no case of this kind has ever occurred. There was no stay to the rod between the top of the air pump and the beam. A central stay would have probably prevented the fatality. Upon examining the air pump, no cause could be found to account for the bending of the rod.

No. 35 on the list. At 5 p.m. on the 15th October, at the Sandwell Park Colliery, the stoker was cleaning one of the cranks of one of the winding engines, and he requested the engineman to turn the engine a half stroke, so that he might be enabled to reach the other side of the crank. The engineman at his handles could not see the crank, but on receiving a verbal signal from the stoker that all was clear, he moved the engine, and, on hearing a cry, immediately stopped it. When he moved round to the place where he had left the stoker, he found him in the crank pit fearfully crushed. No explanation could be got from him, and there was no reason why he should have been within the fence whilst the engine was being moved.

Deaths from other Causes.

David Shakespeare, who fell under the cage at No. 28 Pit, Saltwells Colliery about three years ago, and had his back dislocated, died on the 31st January 1894.

James Cooksey, blacksmith's striker, at 9 a.m. on the 25th April walked upon the pit bank of the Traveller's Rest Pit of the Burrs Mine and threw himself down the shaft and was killed. He fell a depth of 45 yards. He was not employed at the Colliery.

John Martin, loader at the Hamstead Colliery, after seven months' illness returned to work on the 8th August, and on the afternoon of the next day he was taken from the pit to the hospital insensible, where he died during the evening. The medical evidence said there was a clot of blood on the brain.

Daniel Wheeler, 12 years of age, a school boy, on the 24th September about noon, jumped upon the buffer of one of a train of moving trucks, which were passing over the level crossing of the Cannock and Rugeley Branch at Cannock Wood. His arm was crushed between the buffers of two trucks and, lockjaw supervening, he died on the 9th October.

William Worton, aged 7, was trying to jump upon one of a train of coal waggons, when in motion upon the Earl of Dudley's Pensnett Railway, when he fell under the wheels and was killed.

Richard Hancox, road repairer, when walking in to his working place in the Deep Coal Seam of the Cannock Lodge Colliery, fell down dead.

Joseph Thomas, when at work in the Bye Pit of the Netherton Old Colliery, fell down dead.

George Orgill, when loading a tub in No. 36 stall of the Wimblebury Pit of the Cannock and Rugeley Colliery, fell down dead.

Complaints.

An anonymous complaint of a general character against the management of the Baptist End Colliery. I visited it on the 8th March and found that it was an old mine being re-opened and that an agricultural ploughing engine was adapted as a winding engine, for which it was entirely unfitted. This machine broke down in my presence and the cage ran to the bottom of the shaft where three men were at work, fortunately as it chanced, just under shelter in the newly formed inset. They could only be rescued when some tackle was borrowed from the nearest mine. A proper winding engine was put in position before any more work was done underground.

An anonymous complaint of the unsafe condition of the shaft of the Milner Pit, Wood Farm Colliery. Upon inspection the complaint was found to be true, but, as the pit was only worked one day per week, the owner abandoned it.

A complaint that during a drinking bout in the winding engine house at the Wallface Colliery, it was set on fire; that when the winding engine was not available, owing to this fire, there was no rope for the "proper apparatus."

The facts are as follows:—

About 11.45 p.m. on the 24th March the field carpenter came to the colliery. As he was drunk and had to begin work early in the morning, the engineman considerately, but illegally, allowed him to go to sleep in the top loft of the winding engine house. At 5 o'clock next morning the engineman went out of the engine house whilst the engine was running. On returning he was met by a dense cloud of smoke, but he managed to reach the engine and stop it. Immediately the engine house was filled with flames, which continued to burn until extinguished by the fire brigade. The carpenter escaped through the beam hole in the floor (it is a vertical engine) and slid down the pump rod. Only his hands were scorched. About a quart of petroleum was in a can in the engine house loft and it is supposed that the carpenter when stirring, upset this, spilled the oil, which ran down the wall to a fire which was burning in a corner of the lower floor.

The winding engine proved to be so little damaged that the two men who were down the pit were raised to the surface by it at 8 a.m.

"One that's been victimised for refusing to work in a road where you could'nt hold light" complained on the 29th March in a general way that the ventilation of some of the thick coal pits around West Bromwich was bad and defective. This was too vague to be any guide to me, but on the 6th August a "working man's friend" particularised the Millpool Thick Coal Pit of the Millfield Colliery as being very badly ventilated. Upon inspection this was found to be a true complaint, therefore the matter was reported to you, and you directed a prosecution. The agent and manager of the mine were both summoned before the South Stafford Stipendiary, convicted, and fined.

An anonymous complaint of the illegal employment of women and boys at the Ettingshall Colliery. This, upon investigation, was found to be untrue.

A complaint of incompetent management at the Mestycroft Colliery. This is a small pit, and the owner, a tube manufacturer, knowing nothing of mining, had been victimised by his manager, who had left him. The mine is now working under proper conditions.

An anonymous complaint of the Scotwell Colliery that the ventilation was defective, that the reports were incorrect, that the shafts were unsafe, that there was danger from an inrush of water. Some of these charges were found to be true, but as it was an old mine, in ruinous condition, being reopened, time was allowed to the owners to get everything in order. This has been done, and the mine appears safe.

A complaint from a discharged under-manager that at the Wallface Colliery there was no second way out of the workings, and that the horses were being murdered in the roads. The horses were rubbing the timbers contrary to General Rule 17, but the road to the other shaft, although rough, could easily be travelled.

Anonymous complaint of bad ventilation at the Cradley Pit of the Cradley Colliery. One working place with four men in it was at least 100 yards beyond the air current, and was very hot, but there was no noxious or inflammable gas.

An anonymous complaint of bad ventilation at Swing Bridge Colliery. The ventilation was feeble, but there was no carbon dioxide. This mine has since ceased working.

A verbal complaint by a workman that the winning heads in the 7 feet coal at James Bridge Colliery were not properly ventilated and that the air was heavily charged with black damp. An inspection showed no gas and only natural ventilation.

Anonymous complaint of inadequate ventilation and only one shaft in the Wood Farm Colliery. A communication has now been made to a second shaft, and the ventilation made satisfactory.

An anonymous complaint that a man had been burned very badly at Garratt's Himley Colliery by the premature explosion of a blasting shot, and that this injury had not been reported to me. This was all found to be true, and, owing to the suppression of the facts by the manager, I could make no investigation of the cause of the explosion. These facts were duly reported to you, and the manager was prosecuted and fined.

Metalliferous Mines.

Seven mines only have been at work during the year, which are regulated by the Metalliferous Mines Regulation Act. Six are silurian limestone mines in the southern portion of the county of Stafford and in the county of Worcester, in and near the boroughs of Dudley and Walsall, and one a flint pit near to the village of Brandon, in the county of Suffolk. This latter is a very ancient industry. Three injuries were reported during the year, one

from a fall of rock roof from a height of 11 feet 6 inches, and the others from the use of blasting powder, the one through standing in the line of fire of an exploding shot, and the other through having a lighted candle too near a blast hole when charging it.

The trade of limestone mining has felt the pinch of hard times, for the output was reduced.

The formal report of Mr. Pickering, the Inspector Assisting, is sent herewith, as also the list of fatal accidents, with details of their causes.

I have, &c.,
W. BEATTIE SCOTT.

The Right Honourable H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, London.

COAL MINES REGULATION ACT.

LIST of ACCIDENTS, with LOSS of LIFE arising therefrom, in the SOUTH STAFFORD DISTRICT, to December 31st, 1894.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons Killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.	Total.
1893. Nov. 3 9.30 a.m.	1	Himley (co. Stafford).	Dudley	Earl of Dudley	Thomas Hickman	—	Pikeman	Fall of coal from side when in act of sitting timber. Died February 2, 1894.	–	1	–	–	–	1
1894. Jan. 1 11.15 a.m.	2	East Cannock (co. Stafford).	Hednesford	East Cannock Colliery Co.	John Peay	18	Trammer	Crushed by full tub against the side of the road on a descending gradient.	–	–	–	1	–	1
Jan. 5 8.0 a.m.	3	Coppice (co. Stafford).	Brownhills	Coppice Colliery Co.	John Hodson	56	Pikeman	Fall of roof displacing timber	–	1	–	–	–	1
Jan. 10 7.15 a.m.	4	Scotwell (co. Stafford).	Rowley Regis	Hawes Hill Colliery Co.	Richard Roberts	21	Loader	Pulled out of ascending bowk in a shaft which was being re-opened.	–	–	1	–	–	1
Jan. 12 10.0 a.m.	5	Great Wyrley (co. Stafford).	Walsall	Great Wyrley Colliery Co.	Charles Lymor	42	Stallman	Fall of coal from the face	–	1	–	–	–	1
Feb. 12 7.0 p.m.	6	Wednesbury Oak. (co. Stafford).	Tipton	P. Williams & Son	John Price	55	Pikeman	Blood poisoning through a wound in the arm from the point of a pike.	–	–	–	1	–	1
Feb. 21 2.0 p.m.	7	Witley (co. Worcester.)	Halesowen	Witley Coal Co.	J. T. Hill	29	Loader	Whilst walking out-bye he fell and stumbled upon the point of a pike which he was carrying and it pierced his heart. He died immediately.	–	–	–	1	–	1
Apr. 16 1.0 p.m.	8	Cannock Old Coppice. (co. Stafford).	Walsall	Cannock Old Coppice Colliery Co.	Charles Bailey	49	Stallman	Fall of coal from face from want of sprags, whilst holing.	–	1	–	–	–	1

List of Accidents, &c.—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons Killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost.					
									Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground	Total.
1894. Apr. 26 1.15 p.m.	9	Netherton, Old (co. Worcester).	Netherton	Grazebrook & Co.	Thomas Spittle	48	Pikeman	Fall of roof when enlarging an air-way.	–	1	–	–	–	1
Apr. 28 1.40 p.m.	10	Shut End (co. Stafford).	Kingswinford	J. Bradley & Co.	Thomas Field	43	Engine-man	Crushed against wall of engine-house by air pump rod. Died 29th April.	–	–	–	–	1	1
May 1 7.30 a.m.	11	Brickhouse (co. Stafford).	Netherton	G. H. Dunn	John Baugh	19	Horse-driver	Fall of roof in gateroad	–	1	–	–	–	1
May 7 8.0 a.m.	12	Nagersfield (co. Stafford).	Brierley Hill	G. King Harrison	Fairley Green	30	Pikeman	Fall of overhanging face in fireclay seam.	–	1	–	–	–	1
May 26 1.0 p.m.	13	Sandwell Park (co. Stafford).	West Bromwich	Sandwell Park Colliery Co.	W. Whitehouse	37	Stallman	Fall of roof coal in a stall	–	1	–	–	–	1
June 18 4.30 p.m.	14	New Hawne (co. Worcester).	Halesowen	New British Iron Co.	Thomas Bradley	35	Bandsman	Crushed between full tub and side of road.	–	–	–	1	–	1
June 19 1.0 p.m.	15	Millfield (co. Stafford).	Wednesbury	Patent Shaft and Axletree Co.	Richard Jackson	54	Cager	Fell from inset into sump, a depth of 20 yards.	–	–	1	–	–	1
June 19 8.0 a.m.	16	Holly Bank (co. Stafford).	Essington	Holly Bank Colliery Co.	James Merrick	40	Dataller	Fall of rock roof when pulling it down.	–	1	–	–	–	1
June 22 8.15 a.m.	17	Himley (co. Stafford).	Dudley	Earl of Dudley	John Davis	53	Do.	Crushed by empty tub	–	–	–	1	–	1
June 28 11.30 p.m.	18	Homer Hill (co. Worcester).	Cradley	S. Evers & Sons	Aaron Parish	20	Loader	Fall of clod under holing	–	1	–	–	–	1
July 2 12.15 p.m.	19	Brownhills (co. Stafford).	Walsall	W. Harrison, Limited	George Sheldon	16	Horse-driver	Found dead under full tub on main level.	–	–	–	1	–	1

List of Accidents, &c.—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons Killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.	Total.
1894. July 3 4.0 p.m.	20	Holly Bank (co. Stafford).	Bloxwich	Holly Bank Colliery Co.	Jos. Hughes	48	Stallman	Fatally crushed by full tubs upon main endless rope level.	–	–	–	1	–	1
July 8 9.0 a.m.	21	Sandwell Park (co. Stafford).	West Bromwich	Sandwell Park Colliery Co.	Fredk. Millington	37	Loader	Fall of side. Cause, a bump	–	1	–	–	–	1
July 17 2.30 p.m.	22	Saltwell (co. Worcester).	Dudley	Earl of Dudley	Henry Woodcock	60	Pikeman	Fall of coal from side of level. Cause, a network of slips.	–	1	–	–	–	1
Aug. 9 5.0 p.m.	23	Rowley Hall (co. Stafford).	Rowley Regis	Bassano & Co.	W. Ashfield	40	Do.	Killed by the after-damp from an explosion of fire-damp.	1	–	–	–	–	1
Aug. 11 1.40 p.m.	24	Pelsall (co. Stafford).	Pelsall	Walsall Wood Colliery Co.	W. Woolford	48	Shunter	Crushed between a full truck and a pillar which supports the roof of the screens.	–	–	–	–	1	1
Aug. 18 10.20 a.m.	25	Conduit (co. Stafford).	Brownhills	Conduit Colliery Co.	H. Harley	39	Cager	Killed by piece of coal falling down the shaft upon his head whilst in the act of caging.	–	–	1	–	–	1
Aug. 20 11.0 a.m.	26	Mud Hall (co. Worcester).	Dudley	Dudley Colliery Co.	C. Williams	18	Do.	Crushed in bottom of shaft by descending cage. Died September 4.	–	–	1	–	–	1
Sept. 8 7.0 a.m.	27	Short Heath (co. Stafford).	Wolverhampton	Jos. Johnson	Jos. Johson	41	Owner	Suffocated by carbonic acid in a shaft.	–	–	1	–	–	1
Sept. 8 11.0 a.m.	28	Brownhills (co. Stafford).	Walsall	W. Harrison, Limited	W. H. Jones	14	Driver	Upon a surface tramway. The horse upon which he was riding, stumbled, fell, and rolled over him. He only lived an hour.	–	–	–	–	1	1

List of Accidents, &c.—*continued*.

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons Killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above ground.	Total.
1894. Sept. 13 10.0 a.m.	29	Rookery - (co. Stafford).	Wolverhampton	J. Howell - -	B. Reynolds -	55	Pikeman -	Fall from face of gateroad. Died November 21.	–	1	–	–	–	1
Sept. 20 11.0 a.m.	30	Hungary Hill (co. Worcester).	Stourbridge -	Rufford & Co. -	Sam. Gibson -	27	Do. -	Fall of roof coal improperly left overhanging.	–	1	–	–	–	1
Sept. 21 12.15 p.m.	31	East Cannock - (co. Stafford).	Hednesford -	East Cannock Colliery Co.	Sol. Woodhall -	34	Do. -	Explosion of fire-damp. Died October 3.	1	–	–	–	–	1
Sept. 26 2.30 p.m.	32	Wednesbury - (co. Stafford).	Tipton - -	P. Williams & Sons -	Isaac Evans -	22	Cogger -	Explosion of fire-damp. Died October 4.	1	–	–	–	–	1
Oct. 4 10.45 a.m.	33	Saltwell - (co. Stafford).	Dudley - -	Earl of Dudley -	W. Guest - -	29	Cager -	Fell from inset into sump with full tub.	–	–	1	–	–	1
Oct. 13 2.10 a.m.	34	Aldridge - (co. Stafford).	Walsall - -	Aldridge Colliery Co. -	S. Griffiths -	69	Dataller -	Fall of rock roof when repairing airway.	–	1	–	–	–	1
Oct. 15 5.0 p.m.	35	Sandwell Park (co. Stafford).	West Bromwich	Sandwell Park Colliery Co.	Sam. Richards -	33	Stoker -	Crushed by winding engine -	–	–	–	–	1	1
Oct. 18 12.30 p.m.	36	Himley - - (co. Stafford).	Dudley - -	Garratt and Son - -	W. Bradley -	30	Pikeman -	Fall from coal face - -	–	1	–	–	–	1
Oct. 18 9.35 p.m.	37	Coppy Hall - (co. Stafford).	Walsall - -	Edward Barnett -	John Mills -	44	Dataller -	Fell from ascending cage, a depth or fall of 300 yards.	–	–	1	–	–	1
Oct. 23 12 noon.	38	Fishley - - (co. Stafford).	Do. -	Fishley Colliery Co. -	A. G. Cash -	21	Loader -	Fall of rock roof in a stall, which knocked out five trees and a bar.	–	1	–	–	–	1
Oct. 24 10.30 a.m.	39	Great Wyrley (co. Stafford).	Do. -	Great Wyrley Colliery Co.	W. Pearson -	45	Stallman -	Fall of rock roof in stall between timber.	–	1	–	–	–	1

List of Accidents, &c.—*continued.*

Date.	No. of Accidents.	Name of the Mine or Colliery.	Where situate.	Owner's or Company's Name.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1894. Oct. 26 5.0 a.m.	40	Cannock Lodge (co. Stafford).	Bloxwich - -	Cannock Lodge Colliery Co.	G. Sassell - -	69	Dataller -	Fall of roof in untimbered rock road.	–	1	–	–	–	1
Oct. 27 7.30 p.m.	41	Sandwell Park (co. Stafford.)	West Bromwich	Sandwell Park Colliery Co.	Thomas Harris - Sam. Webster - James Hill - Wm. Adams -	39 39 47 38	Stallman - Do. - Do. - Loader -	Died, Oct. 28. Explosion of fire-damp. „ 30. „ 31. „ Nov. 1.	4	–	–	–	–	4
Nov. 20 4.0 a.m.	42	Moseley Hole - (co. Stafford).	Wolverhampton	Thomas Jones - -	Thomas Pitt -	79	Watchman	Fell into shaft from surface	–	–	1	–	–	1
Nov. 22 2.30 p.m.	43	Ashmore Park (co. Stafford).	Wednesfield -	Ashmore Park Colliery Co.	R. Jevons - -	24	Driver -	Explosion of fire-damp. Died November 23.	1	–	–	–	–	1
Nov. 30 7.50 a.m.	44	Himley - (co. Stafford).	Dudley - -	Woodall & Co. -	Reuben Powers -	38	Brusher -	Fall of coal face when drawing a sprag. Died December 7.	–	1	–	–	–	1
Dec. 6 7.20 a.m.	45	Saltwell - - (co. Stafford).	Dudley - -	Earl of Dudley -	Samuel Hill -	76	Signalman -	Run over by railway trucks	–	–	–	–	1	1
Dec. 22 12.45 p.m.	46	Himley - (co. Stafford).	Dudley - -	Earl of Dudley -	J. Wakelam -	33	Pikeman -	Fall of coal when drawing timber -	–	1	–	–	–	1
Dec. 31 1.15 p.m.	47	West Cannock (co. Stafford).	Hednesford -	West Cannock Colliery Co.	Alfred Wyld -	14	Screen boy	Fell from railway truck and died almost immediately.	–	–	–	–	1	1
								Total - - -	8	21	8	7	6	50

Compton, Wolverhampton,
19th January 1895.

Sir,

In pursuance of Section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report to you that during the year 1894 I exercised the duties of an Inspector of Mines in the district of South Staffordshire, and that in so doing I acted as Assistant to and under the directions of Mr. W. Beattie Scott, the Chief Inspector of the district.

I have, &c.,
W. H. PICKERING.

To the Right Hon. the Secretary of State,
Home Department, Whitehall, London.

REPORT

OF

JOSEPH T. ROBSON, Esq., H.M. INSPECTOR OF MINES

FOR THE

SOUTH WALES DISTRICT (No. 13),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887,
the Metalliferous Mines Regulation Acts, 1872 and 1875,
and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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1895.

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Mr. Robson's Report.

REPORT ON THE INSPECTION OF MINES IN THE SOUTH WALES DISTRICT, COMPRISING NEARLY THE WHOLE OF GLAMORGANSHIRE, PART OF BRECONSHIRE, THE WHOLE OF CARMARTHENSHIRE, AND OF PEMBROKESHIRE UNDER THE COAL MINES REGULATION ACT, 1887, WITH THE STRATIFIED IRON STONE MINES (GUNPOWDER) ACT, 1881, AND THE AMENDING ACT, 1886; AND ALSO THE METALLIFEROUS MINES REGULATION ACTS, 1872 AND 1875, WITH THE SLATE MINES (GUNPOWDER) ACT, 1882; FOR THE YEAR 1894.

SIR, Swansea, February 7th, 1895.

IN pursuance of section 43 of the Coal Mines Regulation Act, 1887, I have the honour to submit my eighth annual report as Inspector of Mines in charge of the South Wales District, for the year ended 31st December 1894.

This district has developed very considerably during recent years, and is now, with one exception, the largest in point of output in the kingdom. The output, which is almost entirely confined to coal, has increased 30 per cent. since 1887, the year in which I took charge as inspector. So far as it is possible to judge, this rate of increase is likely to be maintained, at any rate for some years to come, as there are large areas of virgin coalfield within the district.

The past year, although somewhat disappointing from the coal owners point of view as regards prices realised, and consequently to the workmen who have received lower wages, cannot be regarded otherwise than as fairly satisfactory so far as trade is concerned. This, fortunately, was neither disorganised by any general strike nor violent fluctuation in prices; and probably the workmen generally and their families are not much worse off now than when wages were considerably higher, for the men work more regularly, and they have less time to spend money uselessly, as too many or them do in periods of high wages.

The list of mines, compiled from notices and returns received from owners, shows that at the end of the year there were 379 mines at work under the Coal Mines Regulation Act in this district.

Several changes have taken place in the ownership of mines, but the number of separate owners or companies is now 240, as at the end of the previous year.

PERSONS EMPLOYED.

The total number of persons employed in and about the mines, as compiled from the annual returns, was 92,118.

Of the above 78,510 were employed underground, and 13,608 on the surface.

As compared with the previous year these figures show the large increase of 5,213, equal to 7·1 per cent., in the persons employed underground, and the comparatively small increase of 124, or ·9 per cent., in those employed on the surface.

The number of girls and women employed on the surface was 305, as compared with 356 in the preceding year.

The number of boys from 12 to 16 years of age employed underground last year was 7,753, as against 7,462 in the preceding year, showing an increase of 3·9 per cent. In the previous year there had been a reduction of 2·6 per cent.

The following table shows the number of persons employed in the different counties, arranged according to ages as the figures appear in the statistics :—

Counties.	Underground. Male Persons.			Above-ground. Ages, 12 to 13.		Ages, 13 to 16.		Above 16.		Total.
	Ages, 12 to 16.	Ages, above 16.	Total.	Males.	Females.	Males.	Females.	Males.	Females.	
Brecon (part of) - -	118	673	791	2	—	8	—	122	9	141
Carmarthen - -	258	2,745	3,003	9	—	64	—	905	1	979
Glamorgan (greater part of) -	7,329	66,951	74,280	11	—	515	26	11,541	230	12,323
Pembroke - -	48	388	436	—	—	5	6	121	33	165
	7,753	70,757	78,510	22	—	592	32	12,689	273	13,608

Minerals Raised.

Last year the total amount of minerals raised in this district was 24,533,573 tons, being the greatest quantity recorded in South Wales.

As compared with the output for the preceding year the increase was 2,112,237 tons, equal to 9·4 per cent., but the increase was only 4·8 per cent. on the quantity raised in 1892, when the next highest output was obtained.

The following table shows the quantity of the different minerals raised in the various counties in the district for the past year :—

Counties.	Minerals raised. Coal.	Fire-clay.	Ironstone.	Oil-shale.	Other Minerals. Ganister.	Shale for Brick-making.	Stone for Building.	Total Quantity raised in 1894.
	Tons.	Tons.	Tons.		Tons.	Tons.	Tons.	Tons.
Brecon (part of) -	233,228	—	238	—	11,796	—	—	245,262
Carmarthen -	888,521	10,001	37	—	—	2,161	—	900,720
Glamorgan (greater part of).	23,129,027	157,168	11,061	—	6,900	—	975	23,305,131
Pembroke - -	82,460	—	—	—	—	—	—	82,460
	24,333,236	167,169	11,336	—	18,696	2,161	975	24,533,573

The quantity of anthracite worked during the past year was 1,550,154 tons, being an increase of 287,220 tons over that of the preceding year.

The output per person employed rose last year to 266 tons, having been 261 tons in the preceding year.

Fatal Accidents and Deaths.

The total number of fatal accidents was 146. This compares favourably with the preceding year, when the number was 150, and even more so than the average number for the preceding 10 years, which was 152·5.

The deaths, including three which resulted from accidents happening in 1893, amounted to no less than 440, being 211 more than in 1893, and 236 more than the average number of deaths for the 10 years 1884–93 inclusive.

This extraordinary increase in the number of deaths is more than accounted for by the Albion catastrophe, which caused the loss of 290 lives—a number only once exceeded in the annals of mining accidents in this country, viz., when 334 persons were killed in an explosion at the Oaks Colliery in Yorkshire, on 12th December 1866, and which was followed by other explosions within two days, causing a further loss of 27 lives.

Even after deducting the Albion loss the number is still a large one, but its largeness was not due to any accident outside of the daily run of mining casualties, which may be seen from the following statement :—

		Lives.
1	fatal accident (the Albion explosion) caused the loss of - - -	290
5	fatal accidents caused the loss of two lives in each case - - -	10
140	,, ,, one life in each case - - -	140
146		440

Before proceeding to deal with the fatalities in more detail, I give some general results in accordance with my usual practice. Thus, for the year under notice—

One fatal accident occurred among every 630 persons employed in and about the mines ;

One death resulted therefrom in every 209 persons employed in and about the mines ;

One fatal accident occurred for every 168,038 tons of minerals raised ;

And one death resulted therefrom for every 55,758 tons of minerals raised.

In former years I have given, for the purpose of comparison, similar figures for the whole kingdom, and for that district of the kingdom having the best results ; but in consequence of the earlier date when Inspectors' reports require to be made to you, this information cannot now be obtained in time. In future such comparisons can only be obtained by reference to the general statistics referring to the whole kingdom, and I take this opportunity of directing the attention of owners, agents, and managers of mines in my district to these valuable statistics, for it is most desirable that they should be informed as to how they stand in regard to results when compared with those of other districts.

The following table shows the number of fatal accidents and the number of deaths, classified under the five usual headings, and, for comparison, the corresponding numbers for the preceding year, with the increase or decrease as the case may be :—

—	Fatal Accidents.						Deaths.					
	By Explosions of Fire-damp and Coal Dust.	Falls of Ground.	In Shafts.	Miscellaneous.	On Surface.	Total.	By Explosions of Fire-damp and Coal Dust.	Falls of Ground.	Shafts.	Miscellaneous.	On Surface.	Total.
1894 -	5	79	12	32	18	146	295	82	12	33	18	440
1893 -	1	82	11	37	19	150	1	84	21	103	20	229
Increase	4	—	1	—	—	—	294	—	—	—	—	211
Decrease	—	3	—	5	1	4	—	2	9	70	2	—

The 146 fatal accidents happened at 97 different mines. The total number of mines at work being 379 there were thus 282 mines at which no fatal accident occurred during the year.

In addition to the fatalities there were 460 non-fatal accidents reported during the year resulting in injuries of a more or less serious nature to 479 persons.

The accidents classed as fatal also caused injury to 18 other persons.

Compared with the previous year the total number of persons injured shows an increase of 11.

A detailed table of the fatalities, given in counties and arranged under the several collieries, and their respective owners, is appended hereto.

The non-fatal accidents are given in the aggregate in a table similar in form to that adopted in the "Summaries" for fatal accidents, and is also appended.

Explosions of Fire-damp or Coal Dust.

The tables show 29 separate explosions or ignitions as having happened during the past year, causing loss of life to 295 persons and injury to 41 others.

Such a result as regards loss of life following a year having a record the best yet attained in South Wales, when 15 separate explosions and ignitions caused only the loss of one life and injury to 31 persons, is most unsatisfactory and regrettable, and a startling commentary on the insecurity of life from possible explosions in coal mines, notwithstanding the greater care now taken to adequately ventilate them.

The Albion explosion on 23rd June already referred to, having been the subject of special reports, and these reports having been printed and published, it does not appear necessary to refer again to it at any length. I am still convinced that it was caused by blasting timbers at the point mentioned in the special reports, viz., near the horse-pump dip, where the bodies of the overman, fireman, and the man in charge of explosives were all found.

Upon the matter of blasting timbers, which was undoubtedly practised at the Albion Colliery, although this was unknown to my assistants and myself, I think it is due to us, as inspectors, to state that, for at least three years previous to this explosion, inquiry was made on each occasion of a general inspection in every mine in the district as to (1) whether blasting was permitted, (2) what kind of explosive was used, (3) what the explosive was used for, (4) how and by whom shots were fired, and (5) when fired, *i.e.*, during shifts or between shifts. In no case did it come to our knowledge that such a thing as blasting timbers took place in the Albion or any other mine in the district. Since the explosion roburite has been substituted for the gelignite and gelatine-dynamite previously used, and no blasting is permitted except in rock, and this only between shifts. Spray jets have been introduced throughout the principal main roads.

The other fatal explosions occurred in collieries worked by naked lights, because fire-damp had either never been detected in them or had been found only occasionally, and then in such small quantities as apparently did not bring them within the meaning of the eighth general rule.

In each of the four cases it was a comparatively small quantity of inflammable gas which was ignited by the naked light of the deceased, or a partner at work with him, as will be seen from the following :

No. 78 on list occurred on 1st January at Gorseinon Colliery. It appeared that deceased and his partner had gone to work at midnight, and entered their stall after it had been examined and reported clear by the fireman of the district. They were cutting bottom and repairing the stall road about a dozen yards from the face, and, after working about an hour, one of the men went towards the face for some tools and on raising his naked light up to reach something on the gob-wall, an explosion occurred which burned them both, one of whom died on the 6th January.

This explosion took place in the "six-feet" seam—a steam coal about 4 feet in thickness, lying at a depth of 340 yards. This seam has been extensively worked since the commencement of the colliery in 1888. Beyond a "small blower" having been detected once or twice there was no evidence of any fire-damp in the workings, which for the most part are wet with water percolating through the rock roof. The colliery was sufficiently ventilated generally, and I thought the accumulation of gas arose through the airway of the particular stall having fallen during the interval between the previous Saturday afternoon and the Monday morning. This should have been discovered by the fireman, and would have been if he had made a proper examination of the ventilation passing through the stall, for I was convinced that the gas did not all accumulate between his examination and the time of the explosion.

No. 96 on list occurred at No. 3 Pit, Llwynypia on 1st August. This pit works the No. 3 Rhondda seam, a house coal, which produces small quantities of fire-damp in working, but is for the most part worked with naked lights both here and elsewhere in the district. The system of working is pillar and stall.

It appears that deceased and his partner were working out a pillar, but just before the explosion they had been unloading and gobbing a tram of rubbish in their working place. About 12.30 p.m. they were visited by the under-manager, who asked Langley, the deceased, to go up to the waste above and show him the size of the pillar remaining. Langley had his naked light in his cap, and on reaching the upper end he ignited some gas. This apparently ignited the fine coal dust in the place, with the result that the three men were burned, Langley fatally.

No gas had been observed at or near the place, according to the evidence, and none was found upon inspection. The ventilation appeared adequate. It was thought that a little gas had been suddenly given off from a crack in the roof where it had subsided on the gob. The stall itself was dry, but at a distance of 10 or 12 yards the roads were damp or wet. Some particles of coked coal dust were found within the dry area, but none further away.

No. 2 on list occurred on 27th September at the International Anthracite Colliery, Abercrave. It arose through deceased and another man leaving the place where they were employed and entering disused workings in the brass vein, in which some fire-damp had accumulated. The colliery was at the time working the big vein, in which naked lights were used, but these workings were in immediate communication with the disused brass vein workings, in which safety lamps had, in part, been used when in operation. The two men attended a ventilating furnace and did other odd work, and it appeared that they had to pass through a portion of the brass vein workings, for which purpose they had been supplied with safety lamps. Deceased, however, used his lamp as a naked light, the gauze having been found in one place and the oil-vessel in another. The officials denied having seen any gas near the place, and none was found when inspection was made. It was further stated that the entrance to the road was fenced off, but although some sticks were found near the supposed fenced entrance, the fence was not there when I saw the place two days after the occurrence.

This explosion was clearly the result of (1) the use of mixed lights, and (2) defective discipline.

No. 70 on list happened on 10th November at Dyllas level, Aberdare, in the workings of the "Nine-feet" seam, a steam coal. At this colliery this seam, which is here about 21 feet thick, has been for many years worked by naked lights, and in it fire-damp is practically unknown. A collier and two boys were, on the day in question, working in a stall which, after having been driven forward in about 6 feet of the bottom coal, was being worked backwards in the top coal. This was done by withdrawing, at a time, one or two pairs of timbers set to support the top coal in the ingoing, clearing the fallen coal from rubbish, and filling it into trams on the outer side of each fall of coal thus brought down. On the previous day two pairs of timbers had been removed for a "fall," and on the following morning the fireman found that far more coal than usual had fallen; but finding the place clear, at least as far as he could reach, he allowed the men to enter. After filling three trams of coal, the collier climbed up the brow of the fall to the top to look at the place, upon which an explosion occurred, burning all three, two of them fatally.

Upon inspection it was found that, although the general ventilation was adequate, very little air had reached the face of the stall in question, owing to a fall in the airway near to it.

The explosion was, I think, due to gas given off from the loose coal forming the fall (probably about 60 tons), the gas lodging in the cavity above, which was quite out of the reach of that free circulation of air necessary to prevent an accumulation of gas.

The non-fatal explosions were as follows:—

Jan. 3rd, Morriston Colliery, Six-feet seam; one man (fireman) burned.
" 8th, Gwern, Two-feet seam; one collier burned.
" 17th, Cymmer (Upper) No. 3 Rhondda seam; two colliers burned.
March 7th, Crawshay's Newbridge Rhondda, No. 3 Rhondda seam; two colliers burned.
" 7th, Cymmer Glyncorrwg; one collier burned.
" 20th, Cwmdwr, Briton Ferry; the fireman burned.
" 21st, Primrose, Graigola seam; one collier burned.
" 27th, Ynyscedwyn, Brass vein; one collier burned.
April 9th, Primrose, Graigola seam; one collier burned.
" 25th, Cwrt-y-bettws, Hughes seam; one collier burned.
May 15th, Pentremawr, Brazlid vein; fireman burned.
" 21st, Victoria (Garw Valley), Victoria seam; two colliers burned on going into their places in the morning.
" 24th, Primrose, Graigola seam; one collier burned.

June 7th, Rock Castle, Pump-quart vein; one collier burned.
„ 9th, Aberdare Merthyr, Six-feet seam; an assistant fireman and a labourer burned.
„ 20th, Cymmer Glyncorrwg; two colliers burned.
July 2nd, Dynevor, Brithdir seam; a repairer burned.
Sept. 7th, Rock Castle, Pump-quart vein; one collier burned.
„ 17th, Gwern, Two-feet seam; the fireman burned.
Oct. 15th, Cwmcapel, Cenrhos seam; one collier burned.
„ 18th, Glyn, No. 3 Rhondda seam; one collier burned.
Dec. 7th, Ynys Merthyr, Red vein; two colliers burned.
„ 19th, Graigola Merthyr, Clydach Merthyr, Graigola seam; a haulier burned.
„ 22nd, Lewis Merthyr, Coedcae, No. 3 Rhondda seam; three pitmen burned.

In every one of the above 24 cases of explosion or ignition it was a small quantity of fire-damp which was kindled by a naked light. In nearly every instance the gas had accumulated at the "face," because the current of air had not been sufficiently directed to the extreme point of the working, a thing which is exceedingly simple in itself, and which strict attention to the details of ventilation on the part of the officials would have prevented.

In a few cases the ventilation was found not so good generally as desirable, and the attention of the owners and managers was directed to this matter, and steps taken by them for improvement.

The exclusive use of locked safety lamps in all seams known to produce fire-damp would have prevented all the above-mentioned small explosions; but so long as both owners of mines and workmen remain averse to making the change, as many of them undoubtedly are, and while the law as to safety lamps remains as it is, the further substitution of safety lamps for naked lights in mines only slightly fiery is likely to move as slowly in the future as in the past.

Falls of Roof and Sides.

The number of accidents by falls reported during the year was 291, causing loss of life to 82 and injury to 217 persons. Compared with the figures for the preceding year these show a decrease of 15 accidents, a decrease of two in loss of life, and a decrease of 13 in the number of persons injured. Thus it will be seen that little progress has been made in the reduction of accidents from this cause, the most prolific one in all mining operations.

I have for many years been of opinion that much of this loss of life and also many of the injuries by non-fatal falls of roof and sides could be prevented by a more liberal fixing of timbers in the working places and roadways. Year after year it is seen that a considerable proportion of these accidents occur where little or no timber has been fixed as a precaution against falls; and it seems to me that the sooner owners and managers admit that the setting of timber only where, in the judgment of a collier, or, what in practice is little better, in the judgment of a fireman, has utterly failed in affording proper protection to the lives and limbs of the persons employed, the better it will be for all concerned.

Of the 82 lives lost by falls, 62 or 75·6 per cent. were by falls of roof, against 58, or 70 per cent. of the total loss of life by falls in the preceding year.

The remaining 20 were by falls of side, being four less than in the previous year.

As is usual, most of the fatalities by falls occurred at the face, and the sufferers were to a large extent those persons whose duty it was to support the roof and sides at the face, and repairers and others engaged with them on roadways. The following table shows the actual occupation of those persons who last year lost their lives by falls, a similar table having been given since 1887:—

—	By Falls of Side.		By Falls of Roof.		Total Deaths by Falls in 1894.	Total in 1893.
	At Face.	In Roads.	At Face.	In Roads.		
Colliers	12	—	33	5	50	44
Colliers' boys of 16 and under	3	—	2	—	5	12
Repairers, rippers, &c.	—	4	2	14	20	14
Stowers, labourers	—	—	—	1	1	4
Hauliers, trammers	—	1	—	5	6	10
Officials	—	—	—	—	—	—
	15	5	37	25	82	84
	20		62			

The above table shows that there was an increase of six in the number of colliers killed by falls. By falls of roof at the face there was an increase of seven, and by falls of roof in roads of two, but by falls of side at face there was a decrease of three.

Amongst boys of 16 and under there was a decrease of seven in the number killed, as compared with 1893, when, however, the number was above the average. The decrease was two by falls of side at face, and five by falls of roof at face. No boy was killed by any fall in roads.

There was a serious increase of deaths amongst repairers, timbermen, and rippers, the total being no less than 20, compared with 14 in the preceding year. The increase was three by falls of side in roads, and three by falls of roof in roads.

Fatalities amongst stowers and labourers by falls were three less than in the preceding year and seven less than in 1892, the only death recorded being one by a fall of roof in a road.

Fatalities amongst hauliers and trammers by falls were also fewer by four than in the preceding year, but one more than in 1892.

No official was fatally injured by a fall of roof or side during the past year.

IN SHAFTS.

There were 12 fatal accidents resulting in the death of 12 persons, and injury to two others during the past year, as compared with 11 fatal accidents causing 21 deaths and two injuries in the preceding year.

The non-fatal accidents amounted to 18, causing injury to 19 persons; against 16 non-fatal accidents and 27 persons injured in 1893.

The above figures show that a very large proportion of accidents happening in shafts are fatal in their effects.

Shaft accidents are classified under eight different "causes" in the tables appearing in the "summaries," one of which is that of "miscellaneous." It is worthy of remark that of these eight causes three caused no fatal accident or injury during the year, while no less than six of the 12 fatal, and 11 of the 18 non-fatal accidents have to be classed under "miscellaneous."

Overwinding.—There was neither any fatal nor non-fatal accident from this cause reported during the year.

Ropes and Chains breaking.—No fatality or injury was reported.

Whilst ascending or descending by Machinery.—Two accidents only were reported, one fatal and the other non-fatal. The former occurred at Deep Navigation Colliery, Treharris, to a pitman, who, with another, was ascending the shaft on the cover of the cage, when he fell off, but as to what caused him to fall there was no evidence to show.

Falling into Shaft from Surface.—No fatality or injury occurred during the year.

Things falling from the Surface.—One fatal accident and four non-fatal accidents, causing one death and injury to four persons, occurred last year from this cause. These all happened in steam coal pits, by coal falling down from the trams as they landed at the surface; accidents clearly due to trams being so heavily loaded above the top, a custom almost peculiar to South Wales.

Falling from part way down.—Two fatal accidents occurred and two lives were lost. The first was at No. 6 Pit, Ferndale, and happened to an overman who had descended with some other men to a lodge-room, situated in a drift between the upcast and downcast shafts, for the purpose of erecting an additional separation door. After sitting a few minutes he rose, passed through a doorway, from which the door had been removed temporarily, and walked straight into the open shaft. They were expecting a bowk with materials to arrive opposite to this mouthing, and it may be that he went there to look for it, and not having quite regained his sight failed to observe the edge of the shaft.

The second was at Clydach Vale Colliery and occurred to a sinker while fixing a stage in the shaft at the five-feet landing. He was standing on a beam, 4 ft. above the water in the sump, when he fell off into the sump, and was drowned in about 9 feet depth of water.

Things falling from part way down.—Two fatal accidents and the loss of two lives are thus classified. One of these was at Naval Colliery, where a blacksmith while disengaging a chain connected with the balance rope in a staple pit was struck on the head by the fall of

some bricks, thought to have been loosened from the walling by the swinging of the rope in the pit during the operations. The shaft could not have been very well secured, otherwise such an accident could hardly have happened.

The other fatality occurred at Abergorci Colliery to a sinker, by the fall of a small stone in a staple pit being sunk. It could not be proved where the stone came from, but probably it was a stone out of the ascending bowk, or off the doors at the top when they were opened to allow the bowk to be lowered.

Two non-fatal accidents, causing injury to three persons, occurred by pieces of stone falling out of the sides of sinking shafts. Such accidents show the necessity for securing the sides temporarily until a length of walling is put in, which should be done at intervals of 10 or 12 yards.

Miscellaneous in Shafts.—Six separate fatal accidents caused the loss of six lives. Three of these were the result of distinct breaches of a special rule, by the deceased, all hitchers, recklessly attempting to cross the bottom of shafts while the cages were in motion. They occurred at Nos. 2, 3, and 7 Ferndale Collieries. Another fatality was that to a pitman at International Colliery, Garw Valley, by the cage descending upon him while he was engaged at some repairs at a landing, the cage having been lowered without a signal from the landing. It appeared that deceased had neglected to warn the hitcher there that he was going into the shaft at the landing.

Another was at Bwllfa Colliery, Aberdare, to a labourer who was found fatally injured under the cage. There was no hitcher and no light burning at the pit bottom, and it is supposed deceased's lamp was not burning, as it was found not alight on the cage which was raised in response to his signal. Probably he had lost light and in attempting to get into the cage to ascend, after signalling, he had fallen on to the sump planks, was stunned, and the descending cage came down upon him.

A fatality of this kind should not have happened, for there should always be a hitcher in attendance to give the signals while men are in the pit.

The remaining fatality occurred at the Universal Colliery, in one of the shafts in course of sinking, and was caused by an explosion of a charge of gelignite while pushing it into the shot-hole. The evidence showed conclusively that the explosive was frozen, and thus in a totally unfit state for use.

Eleven persons were injured by 11 non-fatal accidents falling under this heading.

Miscellaneous Underground.

Thirty-three lives were lost by 32 separate fatal accidents, as compared with 103 deaths as the result of 37 separate fatal accidents in the preceding year.

In addition there were 171 persons injured by 163 non-fatal accidents.

By Explosives.—Five fatal accidents and five deaths are tabulated under this heading, a serious increase over the number in former years. They were caused in two cases by careless handling of fuse and gunpowder; in one by charging a hole which was not large enough for the cartridge of compressed powder; another was by unramming a charge of carbonite, which had missed fire; and the fifth was by being struck with a stone thrown out about 50 yards along a straight road, where the deceased had retired to after igniting the fuse of the shot.

There were also 23 non-fatal accidents causing injury, in some cases of a very serious nature, to 31 persons.

It will be seen that at least four of the above-named fatalities were brought about by want of care or breaches of the Act on the part of the deceased themselves; and the same remark applies to several of the non-fatal accidents by explosives.

With one single exception, that where a charge of carbonite was illegally unrammed, every explosion causing loss of life or injury has happened where the explosive in use was either gunpowder or dynamite in one of its forms.

Suffocation by Natural Gases.—No fatality is classified under this heading. There was, however, one death in a mine to which some suspicion attached, but medical evidence was opposed to the view that death was the result of inhaling gases.

Irruptions of Water.—None.

Falling into Water.—None.

On inclined and Engine-planes.—13 fatal accidents occurred, and 14 lives were lost thereby, besides which 24 persons were injured by 24 separate non-fatal accidents. The

number of fatal accidents and of deaths show a considerable reduction when compared with the average for several years. In four cases the deceased were riders, killed in the discharge of their duties, either by simply falling off or being thrown off the "journey" on which they were riding by trams leaving the rails. In four more cases the deceased were run over by "journeys" while working on the roads. In another case two were killed by a runaway journey, the coupling having become detached on an incline. The remaining four accidents happened while the deceased were illegally riding on trams on engine-planes.

By Trams and Tubs.—The number of fatal accidents was 6, and the lives lost 6; compared with 14 accidents and 15 lives lost in the preceding year.

There were also 74 non-fatal accidents causing injury to 74 persons.

This, as regards loss of life, is the best record for many years, and it is to be hoped that the reduction will at least be maintained.

Of these fatalities three occurred to hauliers, probably from having fallen off the "gun" while riding on it. Two were by injuries received by lifting heavily-loaded trams on to the rails. The remaining one was to a stoker who was run over at some underground boilers by a loaded tram of coal being sent in to the place. In this case it appeared that the noise of the steam and machinery prevented his hearing the tram, but he knew it was to come in at the time and ought to have stood in a safe place.

By Machinery Underground.—One life was lost by this cause. At Deep Navigation Colliery a man was dragged into the cog-wheels of a small crab-engine which he attended, his clothes having been caught by the revolving machinery.

There were also five non-fatal accidents causing injury to five persons by machinery underground.

By Underground Fires.—No fatality or accident occurred during the past year from this cause.

The terrible calamity at the Great Western Colliery in the preceding year should not, however, be forgotten by owners and managers, as it was a severe lesson as regards the danger from fires which undoubtedly exists, especially in dry mines.

Ropes and Chains breaking.—There were two separate fatal accidents, and two lives lost by this cause. There were also three persons injured by three non-fatal accidents.

One of the fatal accidents was at Great Western Colliery to a haulier at a parting who was struck by runaway trams, the rope having given way where it had been tied in a knot after a breakage on the previous day. This was a very improper, and I am glad to say unusual, method of joining the ends of a broken rope.

The other occurred at Eaglesbush Colliery to a roadman, who was riding in the empty journey down the engine-plane, when the rope broke. It was a comparatively new rope, but it appeared to have been a bad one, or it would not have broken with a light load on such a moderate gradient as 6 in. per yard.

Sundries.—Five fatal accidents and five deaths occurred from sundry causes, viz., two by horses crushing or kicking the deceased; one struck by a splinter of steel of a sledge (hammer) with which he was wedging down coal; one by the fall of a collar which he was fixing; and the remaining one was struck by a bar which he was using in knocking out props to get some stone down.

Thirty-four non-fatal accidents, causing injury to 34 persons, occurred by sundry causes underground.

ABOVE-GROUND.

There were in all 18 fatal accidents and 18 lives lost, while the number of non-fatal accidents was 43, and the persons injured thereby 44. These figures show a reduction in fatal accidents of 1, and in deaths of 2, when compared with those for the year 1893. The number of persons injured, however, was 44, being 4 more than in the preceding year.

By Machinery.—Two lives were lost by being crushed by machinery which the deceased, both of whom were enginemen, were attending.

Nine persons received injury by nine separate non-fatal accidents.

Boilers bursting.—No fatality or injury occurred from this cause during the past year.

Railways and Tramways.—Six deaths were caused by the sufferers being crushed by wagons while engaged in moving them in the ordinary course of working. Another was caused by deceased, who had just ascended the shaft, attempting to pass between moving wagons and

a screen wall where there was no proper passage. Four deaths were caused by the deceased persons being run over or crushed by trams while attending to their ordinary work. One death was caused by a locomotive knocking down deceased, who was a surface foreman, while attempting to cross the siding during shunting operations.

There were also 14 non-fatal accidents causing injury to 14 persons.

In the majority of the above cases the deceased and injured persons were acting carelessly, and thus contributed to their injury or death. At the same time it should be stated that railway sidings about the screens of collieries are frequently too much cramped for room, and the liability to persons getting crushed while moving wagons is thereby increased. There should be a clear space of at least 2 feet between retaining walls or upright pillars and the sides of the wagons.

Miscellaneous.—Four fatal accidents and four deaths occurred by miscellaneous causes on the surface. One of these was caused by falling into a hot-water pond, which was not fenced; another was the result of falling off a cart which the deceased was unloading, the horse having suddenly bolted; another was the result of injuries received at a circular saw which the deceased attended.

The remaining fatality was occasioned by an explosion of nitro-glycerine which apparently had exuded from some dynamite cartridges which had previously been warmed by putting them into a tin of hot water. Deceased was warming the same water on a fire to thaw another charge when the nitro-glycerine in the water exploded.

Twenty-one persons were injured by 20 non-fatal accidents of a miscellaneous nature on the surface.

In order to show what progress, if any, is being made in the reduction of "fatal accidents" and "lives lost," I have prepared the following tables from the figures for the year under notice and from the published statistics for the previous 10 years:—

FATAL ACCIDENTS.

——	Explosions of Fire-damp and Coal Dust.	Falls of Ground.	In Shafts.	Miscellaneous.	Above-ground.	Total.
For the 10 years 1884–93	38	788	158	394	147	1,525
Average number per year	3·8	78·8	15·8	39·4	14·7	152·5
Corrected average number per year for a quantity of mineral equal to that raised in 1894	4·6	95·5	19·2	47·8	17·8	184·9
Actual number of fatal accidents in 1894	5	79	12	32	18	146

LIVES LOST.

For the 10 years 1884–93	379	824	199	475	156	2,033
Average number per year	37·9	82·4	19·9	47·5	15·6	203·3
Corrected average number per year for a quantity of mineral equal to that raised in 1894	46·0	99·9	24·1	57·6	18·9	246·5
Actual number of lives lost in 1894	295	82	12	33	18	440

Taking these tables in their order it will be seen that, as regards the total number of fatal accidents from all causes, the past year shows a reduction of 6·5 on the average number for the previous 10 years; and when allowance is made for the increased production of minerals a reduction of 38·9.

Dealing now with the different causes it will be observed that in three out of the five there was an improvement, while in the other two there was a slight retrogression. Thus, the number of fatal explosions during the past year was higher by 1·2 than the average number for the previous 10 years, and even after allowing for the larger output it was ·4 higher.

Fatal accidents by falls of ground are seen to be fully as numerous as during the past 10 years, although when the increased output is taken into account there is a saving of 16·5 in the number.

In shafts, the fatal accidents show a diminution of 3·8 in actual number, and of 7·2 for a corresponding quantity of minerals raised.

Miscellaneous fatal accidents underground show better results, for there was a reduction of 7·4 in the actual number, and of 15·8 in the relative number.

Fatal accidents above-ground show the worst results, there being an actual increase of 3·3 and a relative increase of 0·2.

Proceeding with the figures under the heading "Lives lost," it will be noticed that the total number of lives lost compares most unfavourably with that for the average over the preceding 10 years; but the increase of 236, large as it is, is more than accounted for by the Albion explosion which caused the loss of 290 lives.

Taking explosions separately the same result is seen, viz., an enormous increase from the same cause.

From falls of ground it will be seen that there is a fractional saving of life in actual number, and one equal to 17·9 lives as compared with the corrected number.

Deaths in shafts show a satisfactory saving of 7·9 in actual number and of 12·1 over the corrected number.

Miscellaneous causes here also show the greatest improvement, there being a saving of 14·5 in actual loss of life and of 24·6 when compared with a similar quantity.

Surface fatalities show an increased loss of life of 2·4, but the slight saving of ·9 when the extra output is taken into account.

Coal Dust.

For many years the danger arising from the presence of coal dust in mines has received a large amount of attention, not only in this country but on the Continent. It was hoped that the completion of the labours of the Royal Commission, appointed in 1891, would remove some doubts still existing in the minds of a section of the mining community as to that extreme danger which many experts have pointed out, as accompanying the deposits of coal dust in mines, more especially where fire-damp is known to be produced, and particularly where blasting is practised. The report of the Commissioners was issued during the past year, and a careful study of it, while it may not remove all previous doubts, cannot fail to result in good, for the conclusions arrived at are apparently in accord with those of experts on the subject. These conclusions are as follows :—

"1. The danger of explosion in a mine in which gas exists, even in very small quantities, is greatly increased by the presence of coal dust."

"2. A gas explosion in a fiery mine may be intensified and carried on indefinitely by coal dust raised by the explosion itself."

"3. Coal dust alone, without the presence of any gas at all may cause a dangerous explosion if ignited by a blown-out shot or other violent inflammation. To produce such a result, however, the conditions must be exceptional, and are only likely to be produced on rare occasions."

"4. Different dusts are inflammable, and consequently dangerous, in varying degrees; but it cannot be said with absolute certainty that any dust is entirely free from risk."

"5. There appears to be no probability that a dangerous explosion of coal dust alone could ever be produced in a mine by a naked light or ordinary flame."

It is when the "recommendations" of the Commissioners are considered that disappointment will be felt by many who had anticipated the recommendation of more drastic measures with regard to explosives and blasting.

Personally, I have long wished for the total abolition of gunpowder in all mines producing fire-damp and in all dry and dusty coal mines. The Commissioners in respect to this matter say :—

"Having regard, however, to statements which have been made by several witnesses that the abolition of the use of gunpowder would stop the working of many collieries, and bearing in mind the great variety of conditions under which different mines have to be carried on, as well as the various qualities and quantity of dust and the method of working, we do not feel justified in recommending the universal abolition of the use of gunpowder."

"On the other hand, we think that the conclusive proof which the evidence has afforded of the great additional danger caused by the use of gunpowder, justifies a considerable advance

in the direction of the abolition of the use of gunpowder in dry and dusty mines unless a sufficient and effectual means of watering the dust be systematically carried out."

It thus appears that reliance on effectual watering is recommended as a safeguard against the acknowledged danger from the use of gunpowder "in dry and dusty" and "fiery" mines. The question will arise: What is effectual watering? It has never been proved to what extent a mine, or a roadway in a mine, must be watered to prevent the extension of an explosion resulting from a shot or the ignition of a small quantity of fire-damp.

If a mine be watered to such an extent that there is absolutely no coal dust in it, the danger from coal dust would, of course, cease; but until the watering is carried out to this extent there may be some danger, and there is a practical difficulty in many mines, arising from water affecting the roof, sides, and floor of roadways, which will doubtless prevent such sufficient and effectual watering being carried out in all cases as the Commissioners contemplate.

The means suggested by the Commissioners by which their recommendations are to be applied to mines are, in my view of the matter, not so satisfactory and sufficient as the subject demanded. It cannot be expected that the Home Office will exclude, from the proposed list of mines to which the suggested new regulations should apply, any mine liable to fire-damp and dry and dusty in parts, although not generally dry and dusty. Objections on the part of owners to such classification of mines may be expected to be numerous, and the final settlement of the questions will certainly be long delayed.

I have advocated the extension of watering by spray jets in South Wales since I came to the district in the beginning of 1887. At that time there were only four or five mines in which it was in operation; now there are at least 40. This much can be said for it, that no explosion has occurred in any mine watered in this manner; it renders the atmosphere of the mine cooler to the extent of 5 degrees to 10 degrees, and the air reaches the faces comparatively free from suspended dust, thus adding to the comfort of the workmen. The system, although costly at first, is not very expensive to keep in working order. It certainly requires attention so that the jets are not allowed to play too long and flood the roadway, nor be left inoperative long enough for the road to become dry again. The distance apart for the jets to be fixed requires for its adjustment that the velocity of the air-current and the size of the road should be kept in view. Clean water is absolutely necessary for efficient working. Where the roof and sides are so strong that copious watering does not affect them, a good method is to water by means of a hose, fixed to attachments placed at intervals of, say, 50 yards, along the roads, having a line of water pipes laid throughout as in the case of spray jets. In this method a man with 20 yards of hose having a suitable nozzle at the end of it, can water the whole of the surfaces of a roadway, by working backward and forward from each attachment. This plan has been in operation at Merthyr Vale and Navigation Collieries for some years and gives great satisfaction.

High or Safety Explosives.

The introduction of explosives, intended to afford greater safety in blasting operations, has received further stimulus during the past year. Owners and managers, however, labour under serious difficulty in the selection of the safest explosive, owing to the number of so-called flameless explosives which makers and their agents are endeavouring to introduce. It is even yet doubtful if any of these is flameless under all conditions, but it appears to have been conclusively proved by experiments that several are much safer than either gunpowder or dynamite compounds.

With regard to the practicability of using a high explosive where gunpowder has hitherto been adhered to, I am of opinion that there is no longer any difficulty in the matter. Some of the newer explosives are very little quicker in their action than gunpowder, and thus their shattering effect on the coal which used to be held as fatal to their adoption cannot now be urged as a sufficient reason for continuing the use of gunpowder.

In this connexion it is worthy of remark that even in some stone quarries shots are not fired because the explosive, whatever it may be, shatters the stone so much as to make it more profitable to dispense with explosives and dislodge the stone by other means. If it be practicable to do this in stone work on the surface, it appears to me that it cannot be impracticable to do the same in any coal seam.

In many seams in South Wales no explosives are used in coal getting. In a few none are used at all, either in coal or stone, all the work of dislodging the coal or stone being done by picks, wedges, and bars.

There are, however, many seams, and those of a more or less fiery character, as well as being dry and dusty, where explosives are freely used. In all of these I think the owners and managers would do well to devise means for dispensing with shot-firing as far as possible. It would cost a little more in many cases, but the trifling additional cost should not stand in the way of increased security to life which would undoubtedly follow. Nothing has been more fully proved in the past than the fact that the majority of the large explosions have been caused by shot-firing.

It is satisfactory to be able to report the further adoption of firing shots by electric battery, which is the safest known method. It seems singularly inconsistent to use a fuse, which certainly will fire gas should any be present close to the shot-hole, when the explosive in use is a supposed flameless one, and I urge the adoption of firing by electricity in mines which produce fire-damp or which are dry and dusty.

The use of coal dust in stemming is already prohibited, and it appears to me that this prohibition should be extended to all carbonaceous matter. Clay from the surface seems to be the best material for this purpose.

The practice of firing shots during shifts, which, I regret to say, obtains in too many mines, is one that should be discountenanced. Except on engine-planes or places contiguous thereto, shots may be fired with a thousand or more men in the seam, and no breach of the law be committed thereby. Credit is therefore due to those owners and managers who have set their face against this practice and have restricted all blasting to the intervals between shifts. Had this been done at the Albion in June last the loss of life, instead of being 290, would have been confined to the three or four in the workings engaged in firing, and two or three at the shaft bottom.

It seems necessary to remind managers of collieries that the introduction of explosives of a safer description does not make it less necessary to properly carry out all the regulations as to examination of the places where shots are to be fired and all accessible places contiguous thereto, as well as any place in the ventilating district in which fire-damp may have been found "at either of the four inspections under Rule Four last recorded." A grave responsibility rests with the "competent persons" appointed by the owner or manager to make these inspections, and none but thoroughly reliable and careful men should be so appointed. These men are permitted by law to fire a shot when and where, in their opinion, it is *safe for firing*. It is conceivable that differences of opinion may exist as to when a place is safe for firing; and this is found so in practice.

In the light of the present knowledge as to the inflammability of small per-centages of gas, and their increased danger when coal dust is present, it seems to me that no shot should ever be attempted to be fired where the slightest indication of gas, by a "cap" on the safety lamp flame, can be detected.

Similarly I think no shot should be fired in any ventilating district in which there happens to be an accumulation of fire-damp.

Safety Lamps.

Some progress continues to be made in the introduction of safety lamps, and in a better mode of locking them.

The lamps mostly used in this district are of the kind known as bonneted Clannys. They give a fairly good light and are safe in all currents prevailing in the mines, for the light becomes extinguished in an explosive current.

Where changes have been made in the mode of locking, that method known as the lead-rivet or lead-plug has been selected. Nothing better and simpler than this mode has, I believe, been devised. When the rivet is impressed with a distinctive stamp in locking, and when care is taken to examine each rivet, to see that the impressed stamp remains and that the rivet has not been cut in two, when the lamps are brought back to the lamp-room, a proper check is provided against the surreptitious opening of safety lamps in the workings. This method has been in operation at a few collieries in the district for many years, and has given satisfaction, and it has been introduced in some other important collieries during the past year.

Abandoned Mines.

Plans of the following abandoned mines or seams have been sent to the Home Office during the past year, to be deposited in terms of the Mines Act :—

County of Carmarthen.

Bryngwyn Colliery, parish of Llanelly, abandoned by Messrs. Nevill, Druce, & Co.
Dafen Colliery, Four-feet seam, parish of Llanelly, abandoned by Mr. George Griffiths.
Rhasfash Colliery, parish of Llangendeirne, abandoned by Mr. George Redford.

County of Glamorgan.

Gilfach Main Isaf, parish of Gellygaer, abandoned by Messrs. Morgans and Edwards.
Pentrefelin, parish of Llangyfelach, abandoned by Messrs. Vivian & Sons.
Penygroes, parish of Eglwysilan, abandoned by Mr. E. W. Beddoe.
Eithrim, parish of Llangyfelach, abandoned by Mr. John Lewis Rees.
Foxhole, Pwll Mawr Pit, and Llanerch old slant, parish of Llansamlet, abandoned by the Foxhole Colliery Co.
Brynteg, parish of Dylais Higher, abandoned by Messrs. Evans and Bevan.
Cefn Glas, parish of Merthyr Tydfil, abandoned by Messrs. T. P. Jones & Co.

Prosecutions.

Proceedings before magistrates were, by your instructions, instituted against the responsible persons for alleged contraventions of the Act in three instances, involving 10 separate charges.

The agent and the manager of Maindy Colliery were proceeded against for contravention of the 21st General Rule, which arose from a fatal accident to a haulier by a fall of stone from the side of a road as he was passing with his horse and loaded tram. After a lengthened hearing the magistrates dismissed both cases, the stipendiary remarking, however, that it was a very proper case for magisterial investigation.

Proceedings arising from the inquiry held into the cause of the Albion explosion took place, the charges being contraventions of the 12th General Rule, against the agent and manager in allowing shots to be fired; against the manager and the chargeman for storing explosives in the mine; and against the under manager for contravention of the 42nd Special Rule, in not seeing that officers and workmen under him properly discharged their duties during the night shift. After an investigation lasting two days the manager was convicted and fined 10*l.* for the second offence of permitting the storing of explosives; the chargeman 2*l.* for storing explosives; while the charge against the manager for allowing shots to be fired contrary to the Act was dismissed, as was that against the under manager on a technical point. The remaining charge, that against the agent for allowing shots to be fired, was withdrawn.

It is perhaps hardly necessary to observe that in a case of this kind, where every person who could, if alive, speak as to what actually took place, was killed, the prosecution laboured under much difficulty in trying to *prove to the satisfaction of a court* that shots were fired while the men were in the mine.

The owner of the D. Pit, Llanelly, was charged with contravention of section 16, in not having provided a second shaft or outlet; section 34, in not having an accurate plan of the workings kept at the office of the mine; and section 12, not weighing the mineral contracted to be gotten. The defendant was convicted for the first and second offences, and fined 5*l.* and 1*l.* respectively. In dismissing the third charge, the magistrates advised the owner to comply with the Act.

Reports of proceedings taken by owners and managers against workmen have been received by me during the year, copies of which were forwarded to the Home Office as sent in, and are now given in a table appended hereto. These reports show that in all 96 separate prosecutions were instituted by 16 different companies or owners, the numbers for the preceding year having been 46 and 17 respectively.

The breaches comprised 32 for having matches, pipes, and cigarettes in their possession, or for smoking where safety lamps were in use; 6 for having unlocked safety lamps or for opening their lamps; 11 for sleeping in the mine with lighted safety lamps in their possession; 1 for having a naked light inside the lamp station; 2 for firing shots without being authorised to do so; 1 for unramming a shot which had missed fire; 28 for riding on trams without permission; 5 for not spragging coal where required; 4 for disobeying orders of hitcher at

pit bottom; 2 for leaving ventilating doors open; 1 for interfering with ventilating sheets; 1 for not reporting an accident; 1 for taking tools down the shaft with men in the cage; and 1 for allowing tools to be taken down along with men.

INSPECTION DUTIES.

The duties devolving upon me, as Inspector in charge of this large and important district, keep increasing with its development.

In June last you were pleased to appoint Mr. G. F. Adams, an Assistant Inspector, and he commenced his duties on 1st July.

Mr. F. A. Gray, the Inspector assisting, and Messrs. J. Mancel Sims and J. Dyer Lewis, have each continued to act with me during the year, and Mr. Adams since he began in the middle of the year. It is a pleasure to be able to state that these gentlemen render valuable assistance and perform their duties to my entire satisfaction.

There never was so much inspection of mines on behalf of Government as at the present time. Whether it will result in ultimate saving of life, which is the chief desideratum, time will show; but to the extent that this kind of inspection is allowed by owners to take the place of that supervision of their mines by responsible officials provided and paid for by the owners, I am inclined to the belief that the results will be disappointing, not only to such owners, but to the country. Owners and managers are not all alike, but some are anxious for as much inspection by inspectors of mines as they can get, doubtless with the object of sheltering themselves behind it, and being of opinion that, in the event of serious loss of life occurring in their mines, the inspectors will share the responsibility with themselves. There is something inconsistent, if not wrong, when it happens that the underground parts of a mine are inspected oftener by a Government inspector than by its own manager. I believe that this has taken place in my district; and as long as the law allows the supervision of the mine to be performed by an under-manager, who may only be the holder of a second-class certificate, and thus could not be a *manager* of a mine on his own account, so long will this inconsistency be possible.

It seems to me that instead of increasing Government inspection, it would be better to strengthen the law with regard to the duties of managers and the actual amount of supervision to be given by them to the mines under their management.

As in former years the major portion of the time of the assistants, and some of my own, has been occupied in making general inspections of the underground workings, without accidents having occurred at the time, or complaints being made as to the collieries. All fatal and many non-fatal accidents have been investigated, and the places and surroundings inspected where practicable. Much valuable information is thus obtained, which a careful perusal of the report will help to convey to those interested. All complaints of danger, or threatened danger, have continued to have immediate attention, and where necessary steps have been taken for the removal of danger.

Inspectors can frequently be of benefit in directing the attention of owners and managers to improvements, and this has been done as far as possible; but in making suggestions great care requires to be exercised in order to show owners and managers that the responsibility of making changes rests with them alone.

The total number of inspections made during the year was 1,002, of which 721 were underground as well as surface inspections.

GENERAL REMARKS.

The plans of workings are in many cases not so well kept as desirable. I frequently have to complain that the surveys are not made up to within three months of date, as required by the Mines Act. Cases of inaccuracy are also noticed, which occasional check surveys would have prevented.

Comparatively few colliery plans show levels, which are of great value in the working of a seam, and in laying out the workings of other seams in the same colliery. Such levels should be shown in figures above a fixed datum of one, two, or three thousand feet below the Ordnance datum, according to the depths of the shafts, or by contour lines at, say, every 10, 20, or 50 feet of elevation above a datum, as the seam may be inclined.

I have in former reports stated that the workmen in a colliery do not take much advantage of their powers under the Act to appoint two working miners to inspect the mine, and I regret to say that this is still the case. In many large mines no such inspections are ever made. Where they are made, and, as I believe, in a proper manner, they are certainly of value.

From inquiries made during the past year, it appears that a very small proportion of workmen and officials are qualified to render first aid to those amongst them who may be injured. This is not as it should be, and it is much to be hoped that owners and managers will encourage their workmen and officials to join classes for instruction in ambulance work, such as those under the auspices of St. John Ambulance Association, founded in 1877, and which has done so much good throughout the country.

The application of electricity to mining purposes continues to make steady progress, especially as a means of transmitting power. No serious accident resulting from its use has come to my knowledge, and there seems no reason to doubt that, with due care in the erection of plant and especially in the insulation of cables, electricity will afford a large measure of safety, while within certain limits its use will be found economical. Pumps having the power transmitted electrically are at work at 11 collieries, viz., Newbridge Rhondda, Collenna, Penrhiwfer, Gilfach Goch, Cwm Clydach, Resolven, Cymmer, Glyncorrwg, Tower, Aberdare Merthyr, Abercanaid, Meiros. Haulage underground is in operation at Aberdare Merthyr and Abercanaid Collieries, and a ventilating fan is worked by electricity at Penrhiwfer.

There are electric lighting installations at not less than 35 mines, at most of which there are lights underground as well as on the surface.

Metalliferous Mines.

There are now only five mines at work under the Metalliferous Mines Act, two being lead mines, and three mines working stone for building or paving purposes. No fatality occurred at any of these mines during the past year.

Formal reports of the Assistant Inspectors of Mines are enclosed herewith.

I have, &c.
(Signed) J. T. ROBSON.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall, London.

TABLE showing NUMBER of INJURIES caused by ACCIDENTS in and about the MINES of the SOUTH WALES DISTRICT (including those on Private Branch Railways and Tramways, and in Washing and Coking Coal) during the YEAR 1894.

—	Explosions of Fire-damp or Coal Dust.	Falls in Mine. Falls of Sides.	Falls of Roof.	Total Falls.	In Shafts. Overwinding.	Ropes and Chains breaking.	Whilst ascending or descending by Machinery.	Falling into Shaft from Surface.	Things falling from Surface.	Falling from part way down.	Things falling from part way down.	Miscellaneous.	Total in Shafts.
Number of non-fatal accidents.	24	90	122	212	—	—	1	—	4	—	2	11	18
Number of persons injured by these accidents.	32	90	123	213	—	—	1	—	4	--	3	11	19
Number of persons injured by accidents which proved fatal to other persons.	9	1	3	4	—	—	—	—	—	—	—	2	2
Total number of persons injured (exclusive of fatalities).	41	91	126	217	—	—	1	—	4	—	3	13	21
Total for preceding year -	31	—	—	230	—	—		—	—	—	—	—	27

—*continued.*

—	Miscellaneous Underground. By Explosives.	Suffocation by Natural Gases.	Irruptions of Water.	Falling into Water.	On Inclined and Engine-planes.	By Trams and Tubs.	By Machinery.	By Underground Fires.	Ropes and Chains breaking.	Sundries.	Total { Miscellaneous Underground.	On Surface. By Machinery.	Boilers bursting.	Railways and Tramways.	Miscellaneous.	Total on Surface.	Gross Total.
Number of non-fatal accidents.	23	—	—	—	24	74	5	—	3	34	163	9	—	14	20	43	460
Number of persons injured by these accidents.	31	—	—	—	24	74	5	—	3	34	171	9	—	14	21	44	479
Number of persons injured by accidents which proved fatal to other persons.	2	—	—	—	1	—	—	—	—	--	3	—	—	—	—	—	18
Total number of persons injured (exclusive of fatalities).	33	—	—	—	25	74	5	—	3	34	174	9	—	14	21	44	497
Total for preceding year -	—	—	—	—	—	—	—	—	—	—	158	—	—	—	—	40	486

Prosecutions.

South Wales District.

Name of Mine.	Description of Offender.	Contravention.	Result of Trial.	Penalty.	Costs.
				£ s. d.	£ s. d.
Albion - -	Doorboy - -	264th special rule - -	Convicted - -	0 8 0	—
„ - - - -	Labourer -	10th general rule - -	„ - -	0 11 6	—
„ - - -	Collier - -	267th special rule - - -	„ - -	1 0 0	—
„ - - -	Roadman -	264th „ - -	„ - -	1 0 0	—
Avon - - -	Labourer -	260th „ - - - -	Absconded.	—	—
„ - - -	„ -	265th „ - -	Convicted - -	1 0 0	0 11 3
„ - - -	Haulier - -	261st „ - -	„ -	1 0 0	0 12 6
„ - - -	Labourer -	260th „ - -	Absconded.	—	—
„ - - -	Lamp carrier -	219th and 220th special and 10th general rules.	Convicted - -	0 10 0	0 8 6
„ - - -	Labourer -	260th special rule - -	Absconded.	—	—
„ - - -	Haulier - -	„ „ - -	Convicted - -	0 10 0	0 8 9
„ - - -	Collier - -	259th „ - - -	„ - -	1 5 0	—
„ - - -	Doorboy - -	267th „ - -	„ - -	0 10 0	0 9 6
„ - - -	Labourer -	265th „ - -	Absconded.	—	—
„ - - -	Haulier - -	267th „ - - -	Convicted - -	1 0 0	0 8 6
„ - - -	Labourer -	260th „ - - -	„ - -	0 10 0	0 8 6
„ - - -	„ -	„ „ - -	Convicted. (He elected to go to prison for 10 days).	0 10 0	0 8 9
„ - - -	„ -	„ „ - -	Convicted - -	0 10 0	0 8 9
„ - - -	„ -	„ „ - -	Convicted. (He elected to go to prison for 14 days).	1 0 0	0 13 2
„ - - -	„ -	„ „ - -	Convicted - -	1 0 0	0 13 2
Cardiff Navigation -	Collier - -	265th „ - -	„ - -	0 10 0	—
„ „ -	„ - -	266th „ - -	„ - -	0 10 0	—
„ „ -	„ - -	265th „ - -	„ - -	0 10 0	—
„ „ -	„ - -	266th „ - -	„ - -	0 10 0	—
Crawshay's Cwm Castle - -	„ - -	10th general rule - - -	„ - -	1 10 0	—
„ „ -	„ - -	267th special rule - -	„ - -	2 0 0	—
„ „ - -	„ - -	„ „ - -	„ - -	2 0 0	—
„ „ - -	Haulier - -	261st „ - - -	„ - -	1 0 0	0 9 0
Ferndale No. 3 - -	Collier - -	251st „ - -	„ - -	1 0 0	—
„ „ - -	Banksman -	171st „ - - -	„ - -	1 0 0	—
„ „ - -	Collier - -	201st „ - -	„ - -	0 10 0	—
„ No. 4 - -	Haulier - -	224th „ - - -	Convicted (two months hard labour).	—	—
„ No. 5 - -	Collier - -	267th „ - -	Convicted - -	1 10 0	—
„ „ - -	Haulier - -	„ „ - -	„ - -	1 10 0	—
„ No. 8 - -	Labourer -	260th „ - - -	„ - -	0 10 0	—
„ „ -	Collier - -	237th „ - -	„ - -	1 0 0	—
Gelli Steam - -	„ - -	260th „ - - -	„ - -	0 10 0	—
„ - -	„ - -	259th „ - -	„ - -	0 10 0	—
Great Mountain - -	„ - -	127th „ - - -	„ - -	0 10 0	1 4 6
Hendreforgan - -	„ - -	123rd „ - -	„ - -	0 10 0	0 8 2
„ - -	Labourer -	„ „ - -	„ - -	0 10 0	0 8 2
„ - -	Haulier - -	„ „ - -	„ - -	0 10 0	0 8 2
„ - -	Collier - -	„ „ - - -	„ - -	0 10 0	0 8 2
„ - -	Fitter - -	100th „ - -	Convicted (14 days imprisonment).	—	—
International Anthracite -	Fireman - -	40th „ - -	Convicted - -	0 10 0	—
Lewis Merthyr - -	Labourer - -	265th „ - - -	„ - -	1 0 0	—
„ - -	Repairer - -	266th „ - -	„ - -	0 10 0	—
National - -	Haulier - -	267th „ - -	„ - -	0 10 0	—
„ - - -	„ - -	260th „ - -	„ - -	1 0 0	0 15 0
„ - - -	Collier - -	22nd general rule - - -	„ - -	1 0 0	—
„ - - -	„ - -	„ „ - -	„ - -	1 0 0	—
„ - - -	„ - -	„ „ - - -	„ - -	1 0 0	—
„ - - -	„ - -	„ „ - -	„ - -	1 0 0	—
„ - - -	Haulier - -	260th special rule - - -	„ - -	1 0 0	0 15 0
„ - - -	Cogman - -	„ „ - -	„ - -	1 0 0	—
Nixon's Merthyr Vale -	Collier - -	265th and 267th special rules -	Absconded.	—	—
„ „ -	„ - -	265th special rule - -	Convicted - -	0 2 6	0 8 6
„ „ -	Repairer - -	227th „ - -	„ - -	1 0 0	—
Nixon's Cwm Cynon -	Collier - -	259th and 264th special rule -	„ - -	0 2 6	0 8 0
„ „ -	„ - -	„ „ -	„ - -	0 2 6	0 8 0
„ „ -	„ - -	„ „ -	„ - -	0 2 6	0 8 0
„ „ -	„ - -	„ „ -	„ - -	0 2 6	0 8 0
„ „ -	„ - -	„ „ -	„ - -	0 2 6	0 8 0
„ „ -	„ - -	„ „ -	„ - -	0 2 6	0 8 0
„ „ -	„ - -	„ „ -	„ - -	0 2 6	0 8 0
„ „ -	„ - -	„ „ -	„ - -	0 2 6	0 8 0
„ „ -	„ - -	„ „ -	„ -	0 2 6	0 8 0

South Wales District—continued.

Name of Mine.	Description of Offender.	Contravention.	Result of Trial.	Penalty.	Costs.
				£ s. d.	£ s. d.
North's Coegnant	Haulier	267th special rule	Convicted	1 0 0	—
" Wyndham	Collier	265th "	"	2 0 0	0 17 6
" Maesteg Deep	Ostler	266th "	"	2 0 0	0 19 0
" "	Collier	265th "	Dismissed with a caution.	—	—
" Tynewydd	Haulier	264th "	Convicted	1 0 0	—
" "	"	" "	"	1 0 0	—
Ocean Park	Collier	259th "	"	0 10 0	—
" "	Rider	" "	"	0 10 0	—
" "	Haulier	" "	"	0 10 0	—
" "	Rider	274th "	"	0 10 0	—
" "	Collier	" "	Dismissed.	—	—
" Dare	Doorboy	259th "	Convicted	0 5 0	—
" "	"	" "	"	0 5 0	—
" "	"	" "	"	0 5 0	—
" "	"	" "	"	0 5 0	—
Plymouth Abercanaid	Collier	10th general rule (ii)	"	2 0 0	0 10 0
" "	Collier's boy	218th special rule	"	0 8 0	0 7 0
" "	Stower	266th "	"	0 5 0	0 7 0
" "	"	265th "	"	0 5 0	0 7 0
" "	Collier	" "	"	0 5 0	0 7 0
" "	Ripper	" "	"	0 5 0	0 7 0
" "	Labourer	" "	"	0 5 0	0 7 0
" "	Collier	" "	"	0 5 0	0 7 0
" "	"	267th "	"	0 5 0	0 7 0
" "	Labourer	" "	"	0 5 0	0 7 0
Powell Duffryn Aberaman	Collier	161st "	"	0 5 0	—
" "	"	" "	"	0 5 0	—
Powell Duffryn Treaman	"	220th " and	"	2 0 0	—
		227th "	"	2 0 0	—

LIST of the FATAL ACCIDENTS and DEATHS arising therefrom, within one year and a day from the date of the ACCIDENT, in the SOUTH WALES DISTRICT during the year 1894.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous underground.	Lives lost. Above-ground.	Lives lost. Total.
					COUNTY OF BRECON—(PART OF).										
1	1894. Nov. 24 8.45 a.m.	2nd	Gilfach - -	Gwys - -	Gilfach Colliery Co. -	Morgan Harris -	50	Haulier -	Found severely injured on siding where he was engaged in moving a loaded wagon drawn by a horse. Probably he had stumbled while attempting to detach the horse before the wagon came to rest. Died 25th November.	–	–	–	–	1	1
2	Sept. 27 9 a.m.	3rd	International Anthracite.	Abercrave -	French Anthracite Co. -	Evan James -	37	Furnace-man.	Explosion of gas (*see* Report) - -	1	–	–	–	–	1
					COUNTY OF CARMARTHEN.										
3	1894. Aug. 9 5 p.m.	11th	Pencoed -	Llanelly -	Nevill, Druce, & Co. -	Phillip Jenkins -	26	Trammer	Crushed between pit bank wall and some empty trucks being moved by horses. He had just ascended the pit, and had passed down a ladder on to the sidings, instead of crossing them by the bridge, the proper road.	–	–	–	–	1	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					County of CARMARTHEN—*continued.*										
4	1893. Sept. 22 3.35 a.m.	10th	Caerbryn -	Llandebie -	French Anthracite Co.	Herbert Morris -	19	Rider -	While riding on the bridle-chains in front of a water tank up a gradient of 21 in. per yard he slipped off, fell under the tank and was so severely injured that he died on 7th March 1894.	–	–	–	1	–	1
5	1894. June 2 8.40 a.m.	2nd	Pontyberem -	Pontyberem -	Pontyberem Colliery Co., Limited.	Thomas Skym -	19	Collier -	Fall of roof (strong cliff, 4 ft. × 3 ft. × 3 ins. thick) on a heading which was not double-timbered. Grasucha seam, anthracite.	–	1	–	–	–	1
6	Mar. 6 11.30p.m.	5th	Rhos - -	Pantyfynnon -	Rhos Colliery Co. -	David Morgan -	44	" -	Fall of face slip of coal 10 ft. long in which a shot had been fired. It fell as deceased was passing in front while his son was trying to draw the slip down. Stanllyd seam, anthracite. Died 8th March.	–	1	–	–	–	1
					County of GLAMORGAN.										
7	June 14 9.30 a.m.	2nd	Aberdare, Merthyr.	Hirwain -	Aberdare Merthyr Colliery Co., Limited.	William Davies -	65	Labourer	While lifting a piece of coal off the rails, five trams were allowed to run down towards the screens and he was crushed between them and the other trams standing on the siding. Died 18th June.	–	–	–	–	1	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous underground.	Lives lost. Above-ground.	Lives lost. Total.
					County of GLAMORGAN—*continued.*										
8	1894. May 10 10.30p.m.	4th	Aberdare Works, Tunnel	Aberdare -	Aberdare Works and Collieries Co.	John Harris -	44	Collier -	Fall of roof (cliff, 8 ft. × 4 ft. 8 ins. × 19 ins. thick) at face (road end) which deceased was about to blast down. It fell between a downthrow fault on one side, and a slant on other side. One prop only within the area which fell. No. 2 Yard Seam.	–	1	–	–	–	1
9	June 6 9.30 a.m.	3rd	" Blaennant	" -	" " -	Thomas Gwillym	23	" -	Burned by the explosion of a ball of compressed powder, having thrown a piece of lighted fuze, which he was testing, upon it. Died 13th June.	–	–	–	1	–	1
10	Aug. 28 10.30a.m.	4th	" No. 9. -	" -	" " -	Thomas Owen -	51	" -	Fall of side (clod) which he was in the act of taking down; a much larger piece than he expected fell, slid down a back slip of bottom coal and pinned his legs against the gob. Seven feet seam. Died from apoplexy the following day.	–	1	–	–	–	1
11	July 30 10.30a.m.	4th	" Windsor Level.	" -	" " -	Joseph Strong -	16	Collier's boy.	Fall of side (top coal 9 ft. × 18 ins. × 18 ins. thick) which he was said to be taking down. Two feet nine seam. Died 1st August.	–	1	–	–	–	1
12	Dec. 4 4.30 p.m.	3rd	Abergorky -	Treorky -	Burnyeat, Brown, & Co, Limited.	John Alder -	37	Sinker -	Fatally injured by a small stone falling down the shaft. The stone either fell out of the bowk as it went up, or off the doors when they were opened to allow the empty bowk to be lowered.	–	–	1	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous underground.	Lives lost. Above-ground.	Lives lost. Total.
						COUNTY OF GLAMORGAN—*continued.*									
13	1894. July 25. 11 a.m.	4th	Aberpergwm, Pwllfaron slant.	Glyn-neath -	Morgan S. Williams -	Griff. Griffiths -	54	Collier -	Fall of roof (clift 9 ft. × 2½ ft. × 18 ins. thick) close to face of a wide stall, in which the roof was irregular. Deceased and his partner (who was also injured by the fall) had been told to secure the stone, but failed to do so. "Nine feet seam," 11 ft. thick; Anthracite.	–	1	–	–	–	1
14	July 20 4.30 a.m.	12th	Aber Rhondda	Porth - -	Aber Rhondda Coal Co., Limited.	William Prosser	56	Engineman	Crushed by the crank or pump-rod of a pumping engine which he attended during the night shift. It is supposed he had been trying to save a dog which he kept, as the dog was found dead under the rod.	–	–	–	–	1	1
15	Apr. 24 11 a.m.	4th	Albion - -	Pontypridd -	Albion Steam Coal Co., Limited.	Ben. Griffith -	14	Door-boy	While leaning against the side of a heading, a horse slipped on the rail and fell against him.	–	–	–	1	–	1
16	June 9 8.15 a.m.	2nd	" -	" -	" " -	John Thomas -	39	Collier -	Fall of roof at face. He was taking down a slip of coal, which in falling struck out a post, causing a stone 20 ins. × 10 ins. × 9 ins. thick to fall on him. He knew the stone was dangerous and intended pulling it down after filling the tram. Four feet seam. 6 ft. 6 ins. thick.	–	1	–	–	–	1
17	June 23 3.50 p.m.	2nd	" -	" -	" " -	290 persons -	—	- -	By an explosion. (*See* Special Reports and this Report.)	290	–	–	–	–	290

List of Fatal Accidents—*continued*.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
						COUNTY OF GLAMORGAN—*continued*.									
18	1894. Apr. 30 2 p.m.	6th	Avon - -	Abergwynfi -	Sir Daniel Gooch and others.	David S. Phillips	13	Door-boy	Crushed between a tram and pair of timbers while the tram was being lifted on the rails.	–	–	–	1	–	1
19	Dec. 14 7.45 a.m.	1st	" -	" -	" " -	William Bowen -	47	Coal tipper	Crushed between a wagon which he was moving and another being lowered by another man.	–	–	–	–	1	1
20	Nov. 2 12.30p.m.	5th	Braich-y-cymmer, Darranfawr.	Pontycymmer	Owners of Braich-y-cymmer Collieries.	Thos. Morse -	42	Repairer	Fall of roof (strong clift) in stall road where it had been newly ripped but not doubled-timbered. There were slips in roof, which apparently had not been noticed. Victoria seam. Pillar and stall.	–	1	–	–	–	1
21	Apr. 20 4 a.m.	9th	Bwllfa-Dare -	Aberdare -	Bwllfa and Merthyr Dare Steam Collieries (1891), Limited.	David Owen -	27	Haulier -	According to medical testimony he died on 6th May from blood poisoning, said to have been caused by the breaking of a boil on the lower part of the back by lifting a tram.	–	–	–	1	–	1
22	May 28 6.30 a.m.	7th	" " -	" -	" " -	Walter Davies -	67	" -	Found fatally injured under one of the cages at pit bottom. There was no hitcher there at the time, and no light burning.	–	–	1	–	–	1
23	Aug. 2 4 p.m.	9th	" " -	" -	" " -	John Jones -	30	Hard ground man.	Struck on the back of his head by a stone blown out by a shot from which he had retreated 50 yards. He was standing on the straight road with no protection between him and the shot except three brattice sheets.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost: Explosions of Fire-damp.	Lives lost: Falls of Roof and Sides.	Lives lost: In Shafts.	Lives lost: Miscellaneous underground.	Lives lost: Above-ground.	Lives lost: Total.
					COUNTY OF GLAMORGAN—*continued.*										
24	1894. Sept. 22 11.30a.m.	5th	Bwllfa Dare	Aberdare	Bwllfa and Merthyr Dare Steam Collieries (1891), Limited.	Geo. Evans	22	Collier	Fall of side (clod) at face, while lifting a large piece of coal on to tram. Probably he had accidently knocked out a prop which was supporting the clod. Four feet seam.	–	1	–	–	–	1
25	Jan. 19 10.30p.m.	4th	Cambrian Navigation.	Clydach Vale	Thomas, Riches, & Co.	David Owen	60	Labourer	Crushed between two loaded trams. While in act of turning one tram on turntable another tram ran against him.	–	–	–	–	1	1
26	May 22 3.30 p.m.	8th	" No. 1	"	" "	Edward Jones	54	Door keeper.	Run over by an empty journey on an engine-plane where he was attending a door. Six feet seam.	–	–	–	1	–	1
27	May 30 2.30 p.m.	7th	" "	"	" "	James Palmer	22	Trimmer	In attempting to jump from one wagon to another he fell under the wagon which passed over his legs, severing both of them below the knees. Died 31st May.	–	–	–	–	1	1
28	June 4 8.15 p.m.	2nd	" No. 2	"	" "	Richard Griffith	50	Repairer	In attempting to cross a fall of roof which he had brought down by cutting out some timbers, he struck against an old lag, and brought a second fall upon him. Red vein.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous underground.	Lives lost. Above-ground.	Lives lost. Total.
									COUNTY OF GLAMORGAN—*continued.*						
29	1894. Sept. 10 11 a.m.	4th	Cambrian Navigation. No. 2.	Clydach Vale -	Thomas, Riches, & Co.	Richard Cooper	28	Repairer	Fall of roof on road. He was making room to fix a prop under some old timbers supporting a "bridge," which showed signs of weakness, when they gave way. Red vein.	–	1	–	–	–	1
30	Nov. 28 11 p.m.	2nd	" No. 3.	" -	" " -	Edward Rees -	26	Sinker -	While deceased and two others were fixing a stage in the shaft at the five feet seam, he fell off the beam on which he was standing into the sump and was drowned. The water was only 9 ft. deep and the top of it 4 ft. below the stage.	–	–	1	–	–	1
31	May 30 5.45 a.m.	11th	Cardiff Navigation.	Llantrissant -	T. J. Masters -	Wm. McCarthy	40	Collier -	Crushed between collar and tram whilst riding on coupling between empty trams up an incline rising 34 degrees.	–	–	–	1	–	1
32	Sept. 27 10.15a.m.	3rd	Clydach Rhondda.	Clydach Vale -	W. Perch & Co. -	Wm. Dobson -	26	" -	Fall of roof (rock 6 ft. long from 1 to 4 ft. wide, and from 2 to 4½ ft. thick) at face. He had just removed the coal from under a portion of this roof, and it fell from between slips, one of which was parallel with the face. No. 2 Rhondda seam.	–	1	–	–	–	1
33	Sept. 14 2.30 p.m.	8th	Collenna -	Porth - -	Glyn Colliery Co., Limited.	Edward Morris -	54	" -	Fall of roof (rock 3½ ft. × 13 in. × 6 ins. thick) at face of a level 9 ft. wide. It fell from the upper side while his partner was preparing to prop it, and slid down upon deceased who was cutting the lower rib. Died 25th October. No. 3 Rhondda seam; dip 45°.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
34	1894. June 2 8 a.m.	1st	Crawshay's Cyfarthfa Canal Level.	Merthyr -	Crawshay Brothers, Limited.	Enoch Morgan -	53	Collier -	Fall of side. He was working away some coal when a piece (21 ins. × 24 in. × 6 ins. thick) slid off a back slip and struck him on the head. Bute seam.	–	1	–	–	–	1
35	Mar. 7 3.30 p.m	9th	Crawshay's Cyfarthfa Cethin.	" -	" " -	Francis McCarthy	13	Collier's boy.	Fall of roof (coal and shale 21 ft. × 9ft. and 10 ft. thick) from between two cogs. Props 3 ft. apart are said to have been under it. Nine feet seam.	–	1	–	–	–	1
36	July 19	9th	Crawshay's Cyfarthfa Cwm	" -	" " -	Lewis Jones -	20	Collier -	Fall of roof (8 ft. long) at face of a heading in the Bute seam. He died, from injuries to his back, in Merthyr Hospital on 8th October.	–	1	–	–	–	1
37	Apr. 27 8.15 a.m.	2nd	Crawshay's Cyfarthfa Newbridge Rhondda.	Pontypridd -	" " -	Henry Steer (or Hunt).	20	" -	Fall of roof (9 ft 2 in. × 6 ft. 8 in. × 20 ins. thick) cliff in face, while in act of setting a prop under it. He had been instructed the previous day by the fireman to put two props under this piece, but he neglected to do so. No. 3 Rhondda seam.	–	1	–	–	–	1
38	Aug. 3 9 a.m.	2nd	Cwmaman -	Aberdare -	Cwmaman Coal Co., Limited.	Wm. Thomas -	47	Timberman	Fall of roof on main road. He was removing some collars by sawing them, and having taken down one collar, was standing under the laggings, sawing another further forward, when the timbers above him gave way, bringing about a fall (11 ft. × 8 ft. × 8 ft.) Four feet seam.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous underground.	Lives lost. Above-ground.	Lives lost. Total.
					COUNTY OF GLAMORGAN—*continued.*										
39	1894. Aug. 14 10.30a.m.	4th	Cymmer -	Porth - -	Cymmer Colliery Co. -	Fred Parker -	45	Assistant timberman.	Fall of roof (top coal and cliff, 10 ft. × 9 ft. × 6½ ft. thick) at the face of a place being driven through gob, and which was not timbered within 9 ft. of face. Four feet seam.	–	1	–	–	–	1
40	Nov. 26 12.45p.m.	6th	„ old pit	„ - -	„ „ -	James Hamer -	27	Collier -	Fall of roof (top coal 3 ft. 9 in. long × 2 ft. 6 in. to 1 ft. wide and 20 ins. thick) from between slips. There were props stood on each side, and a cog behind 6 ft. back from face. Four feet seam. 6½ ft. thick including clod.	–	1	–	–	–	1
41	Dec. 28 9.45 p.m.	3rd	„ new pit	„ - -	„ „ -	Rees Lewis -	21	Haulier -	Found dead under a tram full of rubbish, on a heading; most probably he had fallen off the "gun." Road in good order. Five feet seam.	–	–	–	1	–	1
42	July 26 12. p.m.	4th	Cymmer Glyn-corrwg.	Cymmer -	Cymmer Glyncorrwg Colliery Co., Limited.	Phillip Davies -	33	Collier -	Fall of roof on parting of stall road. Deceased had left his working place at the face to see the effect of a shot fired by rippers on the heading at the entrance to his stall, and while there the stone fell from edge of rippings which were not propped. Wern-ddû seam.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
43	1894. Mar. 23 9.30 a.m.	2nd	Dowlais Collieries:— „ No. 1 Bedlinog	Bedlinog -	Dowlais Iron Co. -	John Price -	27	Haulier -	Fall of roof (coal and clod) on heading, as he was passing with his horse and tram. The fall, which was 6 ft. 10 in. × 4 ft. 11 in. to 3 ft. wide and 3 ft. thick, crushed out two pairs of timbers adjoining some new timbers put up on the previous night. Ras Las seam.	–	1	–	–	–	1
44	May 21 3 p.m.	8th	„ No. 2 „	„ -	„ „ -	Samuel Jones -	30	Collier -	Fatally injured by fall of roof (clod 9 ins. thick) at face while working out a slip of coal. Props 4 ft. back from face. Upper four feet seam. Died 11th July.	–	1	–	–	–	1
45	Nov. 17 8.30 a.m.	2nd	„ „	„ -	„ „ -	D. J. Jones - Ed. Rowlands -	18 33	Collier - „ -	Fall of roof (rock 50 square feet area, from 6 to 12 ins. thick) between the face and a row of props 8 to 10 ft. back. It fell off at a slip which could have been seen before. Rowlands died November 21. Four feet seam.	–	2	–	–	–	2
46	June 25 9.25 p.m.	3rd	„ Longwork -	Cwmbargeod -	„ „ -	Henry Thomas -	22	Labourer	Run over by a rubbish wagon on the tip, having stumbled in getting off the front buffer.	–	–	–	–	1	1
47	1893. Oct. 20 4 p.m.	9th	„ Fochriw, No. 1.	Fochriw -	„ „ -	David Davies -	47	Repairer	Fall of roof in old heading while building a stopping. Died March 6th, 1894.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e. Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
									COUNTY OF GLAMORGAN—*continued.*						
48	1894. Apr. 10 4.55 p.m.	10th	Dowlais Collieries :— Fochriw, No. 1.	Fochriw -	Dowlais Iron Co. -	John Pearce -	35	Rider -	Found fatally injured on main drift. He had been riding between the loaded trams of a journey, and had either fallen or been thrown off and run over. He was not the rider on that incline.	–	–	–	1	–	1
49	Apr. 13 2 p.m.	7th	" " No. 2.	" -	" " -	Wm. East -	31	Collier -	Fall of roof (fairly good cliff) from two slips parallel to face and meeting 22 ins. up. He had just worked up to the inside face slip. Stone 8 ft. 6 in. × 3 ft. 10 in × 22 ins. thick in middle. Ras Las seam.	–	1	–	–	–	1
50	Aug. 27 2.15 p.m.	8th	" " -	" -	" " -	John Lewis -	15	Donkey engine boy.	Scalded to death by falling into a hot-water pond, while crossing a corner of it on some planks.	–	–	–	–	1	1
51	1893. Dec. 13 2 p.m.	7th	" South Tunnel.	Dowlais -	" " -	Thos. Watkins -	58	Roadman	Knocked down by an empty journey on engine-plane while cleaning the road. Died 4th February 1894.	–	–	–	1	–	1
52	1894. Feb. 1 9.20 p.m.	2nd	" Black Vein Drift.	" -	" " -	James James -	27	Collier -	He was working out a slip of coal in the face of a stall road and whilst striking on the wedge, a small piece of the sledge flew off and pierced his body at the pit of the stomach, from the effects of which he died in half an hour.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost: Explosions of Fire-damp.	Lives lost: Falls of Roof and Sides.	Lives lost: In Shafts.	Lives lost: Miscellaneous underground.	Lives lost: Above-ground.	Lives lost: Total.
					County of GLAMORGAN—*continued.*										
53	1894. Jan. 3 1 p.m.	6th	Dowlais Collieries:—Nantwen.	Gelligaer -	Dowlais Iron Co. -	Henry Jones -	20	Haulier -	Found dead under a loaded tram on a rise heading.	–	–	–	1	–	1
54	May 16 4 a.m.	6th	Dynevor Duffyrn: Brithdir.	Dynevor -	Main Colliery Co., Limited.	Owen Roberts -	52	Ripper -	Fall of roof (cliff 4 ft. 9 in. × 2 ft. × 18 ins. thick) from between a smooth slip and a joint. Deceased was going to rip it down. Tiredmund seam.	–	1	–	–	–	1
55	Mar. 7 12 p.m.	5th	„ Courtherbert	Neath -	„ „ -	Thos. Thomas -	16	Haulier -	Crushed between empty trams while attempting to detach the horse's chains before the tram ceased running.	–	–	–	–	1	1
56	Nov. 19 3 p.m.	8th	„ „ -	„ -	„ „ -	Thomas Rees -	18	Rider -	Run over by a journey of loaded trams. He was riding up an engine-plane, on the rope attached to the journey, when he either slipped off and fell in front of the journey, or he was thrown off by the jerking of the first tram through its being off the rails.	–	–	–	1	–	1
57	Feb. 3 12.45p.m.	6th	Dunraven -	Treherbert -	L. Gueret - -	Wm. Thomas -	24	Collier -	Fall of roof (cliff 4 ft. 8 in. × 4 ft. and 23 ins. thick) at face, from between four slips, two of which met at the top. Only three props stood in a length of 13 ft. and width 5 ft.; none under the portion which fell. Yard seam.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
58	1894. Dec. 4 3.30 p.m.	9th	Eaglesbush -	Neath -	Eaglesbush Colliery Co., Limited.	James Hale -	59	Roadman	Struck on the head whilst endeavouring to get out of a journey of trams running wild down a slant dipping 6½ ins. per yard. The hauling rope had snapped. Riding was not permitted.	–	–	–	1	–	1
59	May 17 3.30p.m.	9th	Ferndale No. 1	Ferndale -	D.Davis & Son, Limited	John Thomas -	30	Collier -	Fall of side. He was stooping down to pick up a steel wedge, when a piece clod (overlying coal 2 ft. × 8 ins. × 4 ins. thick) fell, cutting him on the head. Erysipelas set in from which he died on June 3rd. Six feet seam.	–	1	–	–	–	1
60	May 21 2.20 p.m.	8th	,, ,, -	,, -	,, ,, -	David Evans -	50	,, -	Fall of side (clod) at face. He received injury on the leg and died on 28th May from meningitis, according to the medical evidence. Six feet seam.	–	1	–	–	–	1
61	Dec. 18 3.45 p.m.	9th	,, No. 2	,, -	,, ,, -	John Enoch -	41	Hitcher -	While crossing the shaft bottom, when cages were in motion, the cage descended upon him and crushed him to death. Breach of Sp. Rule 163.	–	–	1	–	–	1
62	Jan. 25 3 a.m.	7th	,, No. 3	,, -	,, ,, -	Henry Shell -	24	Assistant hitcher.	He was crossing from one side of the shaft to the other when the descending cage came down upon them. He died in about two hours. Breach of Sp. Rule 163.	–	–	1	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
63	1894. Apr. 19 8.30 a.m.	2nd	Ferndale No. 6	Tylorstown -	D. Davis & Son, Limited	David Davies -	50	Overman	Fell from lodgeroom to bottom of shaft, a depth of 169 yards.	–	–	1	–	–	1
64	Feb. 12 4 p.m.	9th	" No. 7	" -	" " -	Ed. Wilkinson -	14	Collier's boy.	Fall of face slip of coal, 9 ft. long, which broke through two sprags, 5 ft. apart. Six feet seam.	–	1	–	–	–	1
65	Oct. 6 3.30 p.m.	2nd	" " -	" -	" " -	Alfred Lloyd -	35	Hitcher -	Crushed by cage descending upon him, having apparently been attempting to cross shaft bottom.	–	–	1	–	–	1
66	Apr. 4 2.30 p.m.	8th	Fernhill - -	Treherbert -	Fernhill Merthyr Collieries Co.	John Coslett -	26	Haulier -	Found dead under a full tram. Yard seam -	–	–	–	1	–	1
67	Apr. 21 1.30 p.m.	7th	" - -	" -	" " -	Wm. Isaac -	46	Collier -	Fatally injured by a fall of roof (cliff 9½ ft. × 3 to 6 ft. and 15 ins. thick) off a slip. A small fault ran through the roof at the spot making it weak and dangerous. There was a row of props from 3 to 6 ft. back from face but none under the roof which fell. Died 22nd April. Yard seam.	–	1	–	–	–	1
68	Feb. 17 8 a.m.	1st	Ffaldau - -	Pontycymmer	Ffaldau Collieries Co., Limited.	Caleb Edwards -	24	" -	Fall of roof (cliff 3 ft. × 18 ins. × 9 ins. thick) on road, at edge of rippings. Died 25th February. Nine feet seem.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
69	1894. Feb. 20 8.30 a.m.	2nd	Ffaldau -	Pontycymmer	Ffaldau Collieries Co., Limited.	John Mizen -	23	Collier -	Fall of roof at face. Deceased was barring out a piece of coal at road end and in falling it struek out a prop 2 ft. back, and a stone 12½ ft. × 11¼ ft. and 20 ins. thick fell from between two slants, killing him at once. There were two side props and a centre prop, but no double timber within 16 ft. of face. Six feet seam.	–	1	–	–	–	1
70	Nov. 10 9.30 a.m.	3rd	Gadlys: Dyllas	Llwydcoed -	Waynes Merthyr Co., Limited.	Morg. Griffith - Wm. Cole -	30 15	,, - ,, -	Explosion of fire-damp (*see* Report).	2	–	–	–	–	2
71	Jan. 6 8.30 a.m.	2nd	,, Graig	Aberdare -	,, ,,	Robert J. Roberts	12	Collier's boy.	Fall of side (coal about 4 ft. long) which had a sprag against it. Deceased's father had warned him that the coal was loose. Seven feet seam.	–	1	–	–	–	1
72	Jan. 18 3.30 a.m.	9th	Gelli - -	Ystrad -	Cory Bros. & Co., Limited.	James Bowley -	22	Assistant timberman.	Fatally injured by the fall of a collar while fixing a pair of timbers under some laggings supported by other pairs on each side. This was above new arching and the timbers were put in to enable the space to be stowed safely. Main road. Six feet seam.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
73	1894. July 16 10.15a.m.	4th	Gelli - -	Ystrad -	Cory Bros. & Co., Limited.	C. O'Conner -	30	Stoker -	Crushed by a tram of coal which was being lowered down a short incline to the underground boilers, while he was standing in the road in front of one of them.	–	–	–	1	–	1
74	Nov. 6 9 a.m.	2nd	" - -	" -	" " -	David Reed - Ed. Parlour -	19 18	Haulier - " -	Fall of roof on heading, from edge of ripping, not timbered. While lifting a loaded tram on the rails, about 16 square feet of cliff, 2 ft. 9 ins. thick, fell suddenly upon them, killing them on the spot. Six feet seam.	–	2	–	–	–	2
75	July 12 1.15 p.m.	7th	Gilfach -	Gilfachgoch -	Glamorgan Coal Co., Limited.	Wm. Davies -	13	Collier's boy.	Fall of roof (rock, 2 ft. 10 ins. × 18 ins. × 6 ins. to nothing thick) at face. It broke off from edge of an unseen slant and at a prop 5½ ft. back from coal face. No. 2 Rhondda seam. Pillar and stall.	–	1	–	–	–	1
76	Sept. 21 4 p.m.	9th	" -	" -	" " -	Ed. Scammel -	22	Collier -	Fall of roof (5 ft. × 2 ft. 9 ins. × 14 ins. to 6 ins. thick) at face, between coal and props stood 5 to 8 ft. back. Died 21st October. No. 3 Rhondda seam. Pillar and stall.	–	1	–	–	–	1
77	May 28 2 a.m.	4th	Glyn - -	Tonyrefail -	Glyn Colliery Co., Limited.	John Davies -	37	Haulier	Fall of roof (rock, 8 ft. × 4 ft. × 6 ins. thick) on a double-parting, where a large fall of roof was being cleared. Side props only fixed. No. 3 Rhondda eam. Pillar and stall.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
78	1894. Jan. 1 1.30 a.m.	1st	Gorseinon -	Gorseinon -	Glasbrook Bros. -	Evan Griffith -	32	Collier -	Explosion of fire-damp (*see* Report).	1	–	–	–	–	1
79	June 13	5th	" -	" -	" " -	John John -	60	" -	Fall of roof (cliff-guar 23 ft. long. 5 ft. broad and $2\frac{1}{2}$ ft. thick) from face back to nearest double-timbers on stall road. Six feet seam; 4 ft. thick. Pillar and stall.	–	1	–	–	–	1
80	Jan. 23 9 a.m.	2nd	Clydach Merthyr	Cwm Clydach	Graigola Merthyr Co., Limited.	Wm. Roberts -	45	" -	Fall of side (top-coal $4\frac{1}{2}$ ft. × 2 ft. × 14 ins. thick) which was not spragged. Graigola seam $4\frac{1}{2}$ ft. thick. Pillar and stall.	–	1	–	–	–	1
81	Feb. 13 1.30 p.m.	7th	Great Western: " Hetty Pit	Pontypridd -	Great Western Colliery Co., Limited.	Wm. Devereux -	29	Haulier -	Struck by runaway trams on double-parting, the rope on engine-plane having given way where it had been tied in a knot the day before.	–	–	–	1	–	1
82	June 23 3 a.m.	8th	" Tymawr -	" -	" " -	Wm. Gould -	37	Assistant timberman.	Fall of roof near face of stall while clearing a fall. A pair of old timbers at edge of fall was accidentally knocked out by deceased throwing some timber towards the face, and a large stone resting upon the collar fell upon him. Five feet seam.	–	1	–	–	–	1
83	Oct. 9 5.30 a.m.	10th	" Hetty Pit	" -	" " -	Enoch Thomas -	57	Cartman	While unloading his cart, the horse bolted, throwing him out of the cart against the base of a chimney stack.	–	–	–	–	1	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost: Explosions of Fire-damp.	Lives lost: Falls of Roof and Sides.	Lives lost: In Shafts.	Lives lost: Miscellaneous underground.	Lives lost: Above-ground.	Lives lost: Total.
					COUNTY OF GLAMORGAN—*continued.*										
84	1894. Nov. 19 7.30 p.m.	1st	Great Western: „ No. 2 pit	Pontypridd -	Great Western Colliery Co., Limited.	Fred. Hunt -	27	Timberman	Fall of roof on main haulage road. He was clearing a small fall which had broken through the laggings, when a heavy fall occurred crushing out the double timbers, 3 ft. to 4 ft. apart, for a length of 14 ft. Five feet seam.	–	1	–	–	–	1
85	Aug. 3 2.30 p.m.	8th	Gwaun Cae Gurwen.	Brynamman -	Gwaun Cae Gurwen Colliery Co., Limited.	James Cole -	44	Sawyer -	He was struck on the abdomen by a piece of wood being caught and thrust back by the circular saw which he attended, as he was lifting the wood over the saw. Died 5th August.	–	–	–	–	1	1
86	Oct. 8 5 p.m.	9th	„ „	„ -	„ „ -	D. Griffith -	21	Haulier -	Kicked by a horse while on his way to the stables after finishing his work.	–	–	–	1	–	1
87	Apr. 17 6.30 p.m.	2nd	Hendreforgan -	Gwys - -	„ „ -	Thomas Davies -	34	Ostler -	Killed on engine-plane while riding on first full tram, which appeared to have been bulged in the workings and caught the side of the plane.	–	–	–	1	–	1
88	Mar. 8 11 p.m.	4th	International -	Blaengarw -	International Coal Co., Limited.	Lewis Williams	60	Collier -	Fall of roof (cliff 6 ft. × 3 ft. × 15 ins. thick) on road. It had rested partly on the ends of the lags of a pair of timbers. The heading outside of the pair was not double-timbered. Two feet nine seam.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
89	1894. May 7 11 a.m.	6th	International -	Blaengarw -	International Coal Co., Limited.	Eleazer Lewis -	58	Pitman -	Crushed by cage descending on him while doing some repairs at the landing of Two-feet-nine seam.	–	–	1	–	–	1
90	Aug. 16 1 p.m.	6th	" -	" -	" " -	John Evans -	46	Traffic Inspector.	Killed by runaway wagons knocking down the weigh-house at the bottom of incline in which he happened to be at the time.	–	–	–	–	1	1
91	Feb. 7 11.30a.m.	5th	Lewis' Merthyr	Havod -	Lewis' Merthyr Navigation Collieries, Limited.	Hy. Simmonds -	23	Collier -	Fall of roof (cliff 5½ ft. × 2½ ft. × 9 ins. thick) close to face, from a slant which was visible. He had neglected to put up additional props ordered by the fireman. Red seam.	–	1	–	–	–	1
92	Nov. 1 3 a.m.	8th	" Havod -	" -	" " -	Wm. Eynon -	22	Assistant repairer.	Fall of roof on main road in Four feet seam. Deceased and others were securing some timbers at the edge of a fall which they had just cleared, when a further large fall occured, discharging four pair of timbers upon him.	–	1	–	–	–	1
93	May 6 9.30 a.m	13th	Llantwid Red Ash: Ystradberwig Pit.	Llantwit Vardre	T. Taylor & Co. - -	Wm. Morgan -	24	Engineman	Fell against the drum of a small sinking engine while it was in motion, and was fatally injured.	–	–	–	–	1	1

List of Fatal Accidents—*continued*.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shaft.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued*.										
94	1894. Mar. 3 8.30 a.m.	2nd	Llest - -	Pontyrill -	Llest Coal Co., Limited	Thos. Morgan -	45	Drifter -	Killed by an explosion of nitro-glycerine while warming some water in a tin for the purpose of thawing a charge of dynamite. The nitro-glycerine is supposed to have exuded from the dynamite previously thawed and remained at the bottom of the tin.	–	–	–	–	1	1
95	June 30 6.30 a.m.	1st	Letty Shenkin	Aberdare -	Burnyeat, Brown, & Co., Limited.	David Morgan -	56	Collier -	Fatally injured by the explosion of a cartridge of compressed powder while pushing it into a shot-hole with a copper scraper.	–	–	–	1	–	1
96	Aug. 1 12.30p.m.	6th	Llwynpia, No. 3	Llwynpia -	Glamorgan Coal Co., Limited.	John Langley -	22	„ -	Explosion of fire-damp (*see* Report). - -	1	–	–	–	–	1
97	Oct. 9 10 p.m.	3rd	„ No. 2	„ -	„ „ -	David Nicholas	32	Master haulier.	Struck by a haulage rope, through the post which guided the rope giving way.	–	–	–	1	–	1
98	Nov. 14 4.30 p.m.	9th	„ No. 1	„ -	„ „ -	Thos. Giddings -	39	Collier -	Fall of roof at face of heading in Two feet nine seam. He had just knocked out a prop set in middle of rippings to get this bed (20 ins. thick) down, when it and a large "bell-stone" in the bed above fell upon him.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
99	1894. Nov. 13 11.40a.m.	5th	Mardy, No. 2 -	Mardy - -	Locket's Merthyr Steam Coal Co., Limited.	Thos. Williams -	59	Assistant roadman.	Fall of roof on engine-plane in Four feet seam. Deceased and another roadman had just finished clearing a fall where the "journey" had knocked out two pair of timbers, when three more collars gave way, with the backing upon them, killing deceased and injuring another man.	–	1	–	–	–	1
100	Feb. 19 9.30 a.m.	3rd	Nantmelyn -	Aberdare -	Aberdare Merthyr Collieries Co., Limited.	Wm. Jones -	24	Timberman	Fall of side (clift, about 2 ft. × 1 ft. × 14 ins. thick) on heading in Seven feet seam, while preparing to fix an arm of a pair of timbers.	–	1	–	–	–	1
101	Sept. 27 4.40 a.m.	10th	" -	" -	"	Wm. Loveridge	31	Ripper -	Fall of roof on main level in Seven feet seam. Deceased and a labourer had been packing an arch and while standing under some timbers at one end of it, four pair gave way and a heavy fall of roof came upon them, killing deceased and injuring the other man.	–	1	–	–	–	1
102	Jan. 2 8.45 p.m.	2nd	National -	Wattstown -	United National Collieries, Limited.	Michael Power -	45	Timberman	Fall of side in main road in Two feet nine seam, where the road was being widened for a double-parting. After trying to bar down the stone he commenced to fill rubbish in front of it, when it fell on to him.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
	1894.														
103	Jan. 6 9 a.m.	2nd	National - -	Wattstown -	United National Collieries, Limited.	Gomer Thomas -	31	Collier -	Fall of top coal (roof) at face (5 ft. × 2 ft. × 14 ins. thick). Died 21st May. Two-feet nine seam.	–	1	–	–	–	1
104	Mar. 24 1 p.m.	6th	„ - -	„ -	„ „	John Thomas -	47	„ -	Fall of roof at face from between two parallel and visible slants 22 ins. apart, inside of a row of props 3 to 4 ft. from face. He was making a place for a prop under this roof when it fell. Four feet seam; roof-fireclay and cliff, very slanty.	–	1	–	–	–	1
105	Dec. 5 11 a.m.	4th	„ - -	„ -	„ „	James Owen -	45	„ -	Fall of bed of strong cliff roof, at face (12 ft. × 1 to 6 ft. wide × 14 ins. thick) from between slips. One prop was discharged. Four feet seam.	–	1	–	–	–	1
106	Feb. 22 12 p.m.	11th	Naval:—Ely Pit	Penygraig -	Naval Colliery Co., Limited.	Fredk. Schroll -	29	Blacksmith	Killed by the fall of brick from the walling in a balance-pit, while making some repairs at the bottom.	–	–	1	–	–	1
107	Nov. 7 1.15 p.m.	7th	„ „	„ -	„ „	David Williams -	18	Collier -	Fall of roof (top coal 27 ins. thick) at road end. There were 8 ft. of this coal on without support other than the roadside props, and most of it fell while deceased's father was preparing to put up a cog on one side before ripping it down. Nine feet seam. 6½ ft. thick.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					County of GLAMORGAN—*continued.*										
108	1894. Mar. 20 4.45 p.m.	10th	Nixon's Navigation:— Merthyr Vale, No. 2.	Merthyr Vale	Nixon's Navigation Co., Limited.	John Emanuel -	33	Timberman	Injured slightly by fall of side while walking outbye at end of shift. Died 24th March. Nine feet seam.	–	1	–	–	–	1
109	1893. July 8 11.30a.m.	5th	" Navigation	Mountain Ash	" " -	Wm. Newman -	32	Collier -	Fatally injured by fall of roof at face in Two-feet nine seam. It was a bell-stone from 3 to 4 ft. diameter and 8 ins. thick in centre; he knew it sounded heavy but failed to prop it. Died 17th March 1894.	–	1	–	–	–	1
110	1894. Jan. 24 10 p.m.	3rd	" " -	" -	" " -	John Griffith -	55	Ripper	Fall of roof on main road where the roof was being blasted to make height and width for arching it. Six feet seam.	–	1	–	–	–	1
111	Apr. 25 2 a.m.	7th	" " -	" -	" " -	Geo. Marshall -	43	Timberman	Fall of roof on a double-parting in Four feet seam. Deceased and his partner were enlarging the road, and after removing two pairs of timbers, they were clearing away the débris, when the adjoining timbers gave way, and they were covered by the fall. Deceased's partner escaped with slight injuries.	–	1	–	–	–	1
112	May 3 4.40 p.m.	10th	" Deep Duffryn	" -	" " -	John Chilcott -	19	Collier -	Fell off journey of full trams and was run over. He was riding on a shackle between two trams, which is prohibited by Special Rule.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
113	1894. Sept. 18 11.5 a.m.	6th	Nixon's Navigation :— „ Navigation	Mountain Ash	Nixon's Navigation Co., Limited.	J. P. Reynish -	55	Foreman	Knocked down by locomotive while attempting to cross line in front during shunting operations.	–	–	–	–	1	1
114	Feb. 26 12.50 a.m.	6th	Ocean :—Dare	Treorky -	Ocean Coal Co., Limited	David Davies -	21	Haulier -	Found dead on engine-plane, apparently run over, but the exact circumstances could not be ascertained.	–	–	–	1	–	1
115	Oct. 4 4 a.m.	9th	„ „	„ -	„ „ -	John Owen -	29	Assistant rider.	While engaged at his duties as a rider, a small stone fell through some laggings on his head, raising a small lump. He worked until 16th October when he fell against a journey but finished his shift. On the same night he became unconscious and died 23rd November from cerebreal softening and meningitis, caused by the accident.	–	1	–	–	–	1
116	Nov. 22 1.45 p.m.	7th	„ „	„ -	„ „ -	John Hildich -	21	Collier -	Fall of roof at face (road end) in Lower seam. It formed the rippings, of which there were 7 ft. on, with only one middle prop, and fell from a face slip close to coal face and another at right angles, over an area 8 ft. × 7 ft and 22 ins. thick.	–	1	–	–	–	1
117	Mar. 19 3.15 p.m.	9th	„ Deep Navigation.	Treharris	„ „ -	Daniel Price -	20	Repairer	Found dead, with his clothes entangled in the crank shaft of a small crab engine, which he attended.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued.*										
118	1894. May 25 9.15 a.m.	2nd	Ocean: Deep Navigation.	Treharris	Ocean Coal Co., Limited	Geo. Owen	48	Collier	Fatally injured by the fall of a piece of coal which he was drawing down. Died 12th July. New seam.	–	1	–	–	–	1
119	Sept. 3 11.45 a.m.	6th	" "	"	" "	Morgan Davies	24	Assistant pitman.	Fell off cage cover while ascending the shaft with another pitman.	–	–	1	–	–	1
120	Sept. 15 8 a.m.	1st	" "	"	" "	Thos. Davies	53	Repairer	Fall of roof on a heading in Six feet seam. Deceased and others were busy putting some trams on the rails, when four pairs of timbers broke down with about 25 tons of rubbish, burying deceased and injuring another man.	–	1	–	–	–	1
121	Feb. 16 5.30 a.m.	11th	" Lady Windsor	Ynysybwl	" "	Evan Elliot	25	Rider	While riding up engine-plane between 16th and 17th tram in a "journey" of 24 trams, the two trams left the rails and deceased either fell off or jumped off on the wrong side and was crushed between the tram and a prop carrying the tail-rope 2 ft. 8 ins. from the rail.	–	–	–	1	–	1
122	May 17 1.30 p.m.	7th	" "	"	" "	Abraham Jones	38	Collier	Fall of side in stall road near face. Deceased and his partner had knocked out a prop to bring down some rippings, which in falling brought down a fall of side, 15 ft. long, 3 ft. wide, and 3 ft. thick over the gob side, where they had retreated to for safety. No. 2 or Six feet seam.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
						COUNTY OF GLAMORGAN—*continued.*									
123	1894. Mar. 12 1.30 a.m.	3rd	Ocean :— „ Maindy.	Ystrad	Ocean Coal Co., Limited	Thos. Humphreys	33	Haulier	Fall of side on a dip heading, as he was passing with horse and full tram (*see* Report). Upper or Two feet nine seam.	–	1	–	–	–	1
124	July 16 1 p.m.	6th	„ „	„	„ „	Hy. Williams	59	Roadman	He was cleaning the road when a journey of 20 empty trams was going in. He turned to get out of the way on the side opposite to a manhole when the three front trams got off the rails and crushed him against some timber. Died 21st July.	–	–	–	1	–	1
125	Apr. 13 6 p.m.	11th	„ Park	Treorky	„ „	Edward Rees	27	Master haulier.	Killed by a lump of coal falling down shaft, rebounding off the cage, and striking him while waiting to ascend.	–	–	1	–	–	1
126	Nov. 14 12.5 a.m.	5th	Penrhiwfer	Penrhiwfer	Glamorgan Coal Co., Limited.	Geo. Walby	55	Ripper	Fall of stone from side of heading (12 ft. × 3 ft. × 3 ft. thick). He had bored a shot hole in it, and then quite unnecessarily went under it to take way some more coal. No. 2 Rhondda seam. Died 8th December.	–	1	–	–	–	1
127	Nov. 26 11.30 a.m.	5th	Penrikyber	Penrikyber	Penrikyber Navigation Steam Coal Co., Limited.	Henry Martin	38	Drifter	While unramming a shot of carbonite which had missed fire on the previous night, it exploded and the débris struck him on the face, killing him on the spot. Violation of 12th General Rule.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.,* Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
						County of GLAMORGAN—*continued.*									
128	1894. Feb. 21 7.30 a.m.	2nd	Pentre -	Pentre - -	Cory Bros. & Co., Limited.	Robert Brown -	34	Collier -	Fall of side (coal 9 ft. in length) at face. It was thought he had just knocked out a sprag, when the coal fell off at a false slip and knocked out a road prop which struck him as he was retreating. New Six feet seam.	–	1	–	–	–	1
129	Aug. 31 7.30 a.m.	2nd	" -	" -	" "	Wm. Thomas - John H. Hunt -	23 13	Shackler Doorboy	Run over by a runaway empty tram on an engine dip, the shackle having become detached through jerking caused by some of the other trams leaving the rails at a turn 300 yards higher up.	–	–	–	2	–	2
130	Sept. 20 12.20p.m.	6th	" -	Ystrad - -	" "	Rees Jones -	49	Collier -	Fall of side (face slip of coal 7½ ft. long, 18 ins. wide, and 3½ ft. thick). He had holed the bottom coal the whole length and width of slip that fell and had no sprags fixed. Six feet seam. Clear contravention of 22nd General Rule.	–	1	–	–	–	1
131	Feb. 14 12.30p.m.	6th	Penygraig, No. 2	Penygraig -	Penygraig Coal Co. -	Richard Jones -	41	" -	Fatally injured by the fall of a piece of clod, 11 ins. thick, which he was in the act of pulling down. Died 24th February. No. 2 Rhondda seam.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost: Explosions of Fire-damp.	Lives lost: Falls of Roof and Sides.	Lives lost: In Shafts.	Lives lost: Miscellaneous underground.	Lives lost: Above-ground.	Lives lost: Total.
					COUNTY OF GLAMORGAN—*continued.*										
132	1894. July 19 5.30 p.m.	11th	Plymouth Works: Abercanaid.	Merthyr Tydfil	Hill's Plymouth, Limited	Evan Evans	33	Collier	Deceased was injured on the back and hip by a fall of a piece of coal and clod while ripping, and died on 15th August "from Brights' disease accelerated by the injuries," according to the medical evidence. Gellydaeg seam.	–	1	–	–	–	1
133	Mar. 14 9.30 a.m.	3rd	South Duffryn, No. 2.	"	" "	Enoch John	38	"	Deceased was cut on the head by a small stone falling from the roof at the face. Erysipelas supervened and he died on 27th March.	–	1	–	–	–	1
134	May 22 8 a.m.	2nd	South Duffryn, No. 1.	"	" "	Wm. Roderick	28	"	Fall of roof (fireclay 4 ft. × 3 ft. × 26 ins. thick) while pulling down rashings off the top of the coal. Roof at road end not secured between roadside props, where the width was 7½ ft. Bottom six feet seam.	–	1	–	–	–	1
135	Nov. 14 9.15 a.m.	3rd	Powell Duffryn; Aberaman.	Aberdare	Powell Duffryn Steam Coal Co., Limited.	Simon Thomas John Evans	46 41	Ripper "	Fall of roof on a heading behind where they were ripping. The fall extended fully 6 yards in lengths, over the whole width of heading, 10 ft., and was from 18 ins. to 2 ft. in thickness. Cliff roof not doubled-timbered. Seven feet seam.	–	2	–	–	–	2
136	Nov. 16 9 a.m.	2nd	George	Mountain Ash	" "	William Arthur	48	Collier	Fall of roof on the mouth of his stall while clearing a previous fall and re-timbering the place. Four feet seam.	–	1	–	–	–	1

List of Fatal Accidents—*continued*.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous under-ground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued*.										
137	1894. Dec. 27 3 p.m.	8th	Powell Duffryn: George.	Mountain Ash	Powell Duffryn Steam Coal Co., Limited.	Geo. Gordon	16	Rider on rubbish-tip.	Run over by a journey on surface rubbish tip, while attempting to get on to rope in front.	–	–	–	–	1	1
138	Oct. 12 8 a.m.	1st	Lower Duffryn	"	" "	Andrew Davies	24	Tipper	Run over by an empty tram, drawn by an engine and rope, on rubbish tip. He appeared to have fallen in front of tram while putting the points right.	–	–	–	–	1	1
139	1893. Dec. 20 8 a.m.	1st	Pwllbach	Ystalafera	Pwllbach Colliery Co.	Wm. Evans	23	Collier	Fall of roof (cliff 4 ft. × 3 ft. × 14 ins. thick) at face of stall, from between three slips. He had been told by the fireman (his father) to prop the place, but neglected to do so. Died 5th June 1894. Red vein (anthracite).	–	1	–	–	–	1
140	1894. Aug. 28 11.30a.m.	5th	South Glamorgan	Pencoed	South Glamorgan Coal Co.	Gomer David	21	"	Fall of roof (strong cliff 9 ft. × 6 ft. × 3½ ft. thick) at face, from between three slants nearly meeting at top. Three props said to have been under the stone. Lantern seam.	–	1	–	–	–	1
141	Sept. 28 12 noon	5th	South Rhondda	Llanharran	South Rhondda Colliery Co., Limited.	T. B. Butt	17	Collier's boy.	Fall of roof (rock) at face of stall. The fall was fully 100 ft. in area, from 2 ft. to nothing in thickness. Five props supposed to have been stood under it. No. 3 seam. Pillar and stall.	–	1	–	–	–	1

List of Fatal Accidents—*continued*.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., Number of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous underground.	Above-ground.	Total.
					COUNTY OF GLAMORGAN—*continued*.										
142	1894. Oct. 8 8.20 a.m.	2nd	South Rhondda	Llanharrau -	South Rhondda Colliery Co., Limited.	William Short -	59	Collier -	Fatally burned by explosion of powder while about to charge a hole. Died 19th October.	–	–	–	1	–	1
143	Apr. 2 12 noon.	6th	Talyfrawe -	Cockett -	Daniel Mainwaring & Co.	Wm. Thomas -	21	" -	Fall of roof on level road while cutting bottom; strong cliff, 4 yards long, 4 ft. wide, from between slips running with road which was not double-timbered. Three feet seam. Pillar and stall.	–	1	–	–	–	1
144	Mar. 6 2.15 p.m.	8th	Tynybedw -	Pentre -	Cory Bros. & Co., Limited.	Thos. Howells -	27	" -	Fall of roof (strong cliff 6 ft. × 6 ft. and 3 to 4½ ft. thick) from edge of rippings while standing under it and barring a portion of it down. Lower Seven feet seam.	–	1	–	–	–	1
145	Jan. 6 5.30 a.m.	8th	Universal -	Aber - -	Universal Steam Coal Co., Limited.	Wm. Davies -	45	Sinker -	Explosion of a charge of gelignite in sinking pit. Two others were injured.	–	–	1	–	–	1
146	Aug. 21 4 p.m.	9th	Werfa - -	Aberdare -	James Evens & Co., Limited.	Richard Lewis -	25	Collier -	While barring down a piece of rock roof from a roll running across the face of stall, the stone, in falling, knocked the iron bar against his abdomen. Died 22nd August. Gellydaeg seam.	–	–	–	1	–	1
									Total -	295	82	12	33	18	440

TABLE showing the Hour of DECEASED PERSONS' SHIFTS when FATAL ACCIDENTS occurred in 1894.

—	Underground.													Surface.													Total Number of Fatal Accidents.	Total Number of Lives Lost.
	1st Hour.	2nd Hour.	3rd Hour.	4th Hour.	5th Hour.	6th Hour.	7th Hour.	8th Hour.	9th Hour.	10th Hour.	11th Hour.	12th Hour.	Above 12th Hour.	1st Hour.	2nd Hour.	3rd Hour.	4th Hour.	5th Hour.	6th Hour.	7th Hour.	8th Hour.	9th Hour.	10th Hour.	11th Hour.	12th Hour.	Above 12th Hour.		
Separate Fatal Accidents -	6	26	12	12	11	14	11	10	15	6	5	—	—	2	3	1	1	1	2	1	3	—	1	1	1	1	146	—
Lives lost by the above Accidents	6	318	14	12	11	14	11	10	15	6	5	—	—	2	3	1	1	1	2	1	3	—	1	1	1	1	—	440

Reports of Assistants.

Sir, Neath, 1st January 1895.

In pursuance of section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the past year I have exercised the duties of an Inspector of Mines in the South Wales District, and in doing so I have acted as assistant to, and under the directions of, Mr. J. T. Robson, the Chief Inspector of that district.

I have, &c.
(Signed) FRED A. GRAY.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

114, Newport Road, Roath, Cardiff,
1st January 1895.

Sir,

In pursuance of section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the past year I have exercised the duties of Inspector of Mines in the South Wales District, and in doing so I have acted as assistant to, and under the directions of, Mr. J. T. Robson, the Chief Inspector of that district.

I have, &c.
(Signed) J. MANCEL SIMS.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

Sir, Swansea, 1st January 1895.

In accordance with the 20th section of the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the year 1894, I exercised the duties of an Inspector of Mines in the South Wales District (No. 13), under the directions of Mr. J. T. Robson, the Chief Inspector of that district.

I have, &c.
(Signed) J. DYER LEWIS.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Secretary of State,
Home Department, Whitehall, S.W.

Sir, Aberdare, 1st January 1895.

In pursuance of section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the latter part of last year I have exercised the duties of Inspector of Mines in the South Wales District, and in doing so I have acted as assistant to, and under the direction of, Mr. J. T. Robson, the Chief Inspector of that district.

I have, &c.
(Signed) G. F. ADAMS.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

REPORT

OF

J. M. RONALDSON, Esq., H.M. INSPECTOR OF MINES

FOR THE

WEST SCOTLAND DISTRICT (No. 2),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887, the Metalliferous Mines Regulation Acts, 1872 and 1875, and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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1895.

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Mr. Ronaldson's Report.

Report upon the Inspection of Mines in the Western District of Scotland for the Year ending 31st December 1894, by J. M. Ronaldson, Esq.

Sir, 44, Athole Gardens, Glasgow, 15th February 1895.

I have the honour, as Inspector of Mines in charge of the West Scotland District, to submit to you the following report for the year ending 31st December 1894, as required by section 43 of the Coal Mines Regulation Act and section 20 of the Metalliferous Mines Regulation Act.

The district includes the counties of Argyle, Ayr, Bute, Dumbarton, Dumfries, Kirkcudbright, Renfrew, Wigtown, and the western portions of the counties of Lanark and Stirling, but in the counties of Bute, Kirkcudbright, and Wigtown there are no mines being worked. The number of mines in operation at the end of the year was 239, of which 232 came under the Coal Mines Regulation Act, and 7 under the Metalliferous Mines Regulation Act.

Mines Worked under the Coal Mines Regulation Act.

Persons employed.

According to the annual returns, the total number of persons employed in and about the mines during the year was 39,089. This number is inclusive of those employed on private branch railways and in washing and coking coal, and gives an increase of 1,500 as compared with the preceding year. The following is a summary of the persons employed, arranged in counties, and according to sex and age, together with the totals for the previous year.

County.	Underground.			Above Ground.—Ages.							Total above and below Ground.
	Ages.			12 to 16.				Above 16.		Total.	
	12 to 16.	Above 16.	Total.	Boys 12 to 13.	Girls 12 to 13.	Boys 13 to 16.	Girls 13 to 16.	Females.	Males.		
Argyle and Dumfries	11	268	279	—	—	—	—	—	78	78	357
Ayr - - -	1,346	9,816	11,162	13	—	204	4	5	1,804	2,030	13,192
Dumbarton - -	112	1,817	1,929	—	—	51	1	16	431	499	2,428
Lanark (part of) -	1,290	15,302	16,592	12	—	301	31	161	2,821	3,326	19,918
Renfrew - -	35	665	700	—	—	6	—	—	166	172	872
Stirling (part of) -	158	1,634	1,792	—	—	54	9	13	454	530	2,322
Total - -	2,952	29,502	32,454	25	—	616	45	195	5,754	6,635	39,089
Total in 1893	3,135	27,885	31,020	20	2	642	48	190	5,667	6,569	37,589

By comparing the details of the total number of persons employed for the last two years, it will be seen that while there is an increase of 1,500 on the total, there is at the same time a decrease of 183 boys employed below ground. In my report for 1892 it was pointed out that there was a steady decrease in the number of boys employed in the mines as compared with the number of men. This comparative decrease still continues, last year 9 per cent. of the total number of persons employed below ground being boys under 16 years of age, while in 1892 the per-centage of boys was $10\frac{1}{5}$, and in 1875 it was $12\frac{1}{2}$.

I annex a table giving the number of mines at work in each county, with the average number of persons employed at each mine:—

County.	Number of Mines worked.	Average Number of Persons employed at each Mine.
Argyle and Dumfries - - -	4	81
Ayr - - - - -	92	141
Dumbarton - - - -	13	188
Lanark (part of) - - - -	99	189
Renfrew - - - -	7	132
Stirling (part of) - - - -	17	133

Output of Minerals.

The total output of minerals during the year amounted to 10,099,135 tons, being 1,498,939 tons less than the output for the preceding year. The disastrous strike which commenced on 26th June, and by which nearly every colliery in Scotland was thrown idle for at least three months, sufficiently accounts for this decrease in the output. Indeed, it is surprising that the diminution in the output of coal is not much greater than the annual returns show it to be, and had not this strike taken place, there is reason to believe that there would have been a substantial increase of output as compared with the preceding year. The following table gives a comparison between the quantities of mineral raised for the years 1893 and 1894:—

Kind of Mineral.	Output in 1894.	Output in 1893.	Increase.	Decrease.
Coal - - - -	9,264,170	10,572,967	—	1,308,797
Fireclay - - - -	276,464	299,393	—	22,929
Ironstone - - -	506,607	670,600	—	163,993
Oil shale - - - -	15,402	23,855	—	8,453
Other minerals - - -	36,492	31,259	5,233	—
Totals - - -	10,099,135	11,598,074	5,233	1,504,172

The decrease in the output of coal as shown in this table amounts to 1,308,797 tons, while the decrease in fireclay and ironstone amounts to 22,929 tons and 163,993 tons. As the working of many of the ironstone mines was not much affected by the strike, it is not responsible for so great a decrease of the ironstone raised, but the gradual extinction of ironstone mining is due to the fact that better and cheaper ores can be obtained from abroad.

Arranged in counties, the output for the year is given in the following table:—

County.	Output in Tons.					
	Coal.	Fireclay.	Ironstone.	Other Minerals.	Total, 1894.	Total, 1893.
Argyle and Dumfries - - -	117,435	99	—	—	117,534	103,987
Ayr - - - - -	2,590,434	75,887	314,777	1,090	2,982,188	3,816,676
Dumbarton - - - - -	400,339	26,708	42,859	8,637	478,543	550,035
Lanark (part of) - - -	5,600,122	142,491	66,213	8,285	5,817,111	6,313,097
Renfrew - - - -	49,236	31,279	82,758	13,343	176,616	255,790
Stirling (part of) - - -	506,604	—	—	20,539	527,143	558,489
Total - -	9,264,170	276,464	506,607	51,894	10,099,135	11,598,074

Lanarkshire produces fully half of the whole output in the district, and Ayrshire has an output equal to half that of Lanarkshire, but during the year the diminution of output in Ayrshire was 834,488 tons, while in Lanarkshire it was only 495,986 tons. This comparatively small decrease in Lanarkshire is accounted for by coal being put out from several new collieries during the year.

The following table gives the average number of days on which mineral was drawn from the mines of each county during the year, and the average output per person employed, together with the corresponding figures for the two previous years:—

County.	Average Number of Days on which Mineral was drawn.			Average Output in Tons per Person employed.		
	1894.	1893.	1892.	1894.	1893.	1892.
Ayr - - - - -	226	271	291	226	295	318
Dumbarton - - - -	210	251	268	197	225	261
Lanark (part of) - - -	207	244	266	292	337	372
Stirling (part of) - - -	215	243	252	227	247	313
Other counties - - -	272	281	284	239	289	274
Whole district -	218	257	276	258	308	339

These figures, which are summaries taken from the annual returns, show that on the average each mine was worked on 39 days fewer than during the preceding year. This, however, does not give a true indication of the actual loss of time caused by the strike, because coal in small quantities was being raised from many mines by oncost men during the strike, and in many cases the returns show mineral to have been drawn while practically the whole of the miners were idle.

ACCIDENTS.

I received notice, in accordance with section 35 of the Coal Mines Regulation Act, of 263 accidents to persons employed in or about the mines, as compared with 273 the preceding year. Of these 49 proved fatal, and by each one life was lost. This is an increase of 7 fatal accidents and 4 deaths as compared with the year 1893. One person out of every 797 employed lost his life by accident, compared with one out of every 835 the previous year, while the output of mineral per life lost last year was 206,105 tons as compared with 257,735 tons the previous year. Even with the three months' strike the ratios are thus not so favourable as those for the previous year. For the first six months the number of fatal accidents was 23 only, while for the last half of the year, notwithstanding the strike, there were 26 fatal accidents. There were four fatal accidents at ironstone mines and 45 at coal mines. The non-fatal accidents reported during the year numbered 214, and by them 233 persons were injured.

Annexed is a table giving the number of deaths caused by the various kinds of accidents, the relative proportion of each in the district and in the whole kingdom, together with the corresponding figures for the non-fatal accidents in the district :—

—	By Explosions of Firedamp or Coal Dust.	By Falls of Roof and Sides.	In Shafts.	By Miscellaneous Accidents Underground.	On Surface.
Number of deaths in district	5	19	9	6	10
Percentage of deaths in district	10	39	18½	12	20½
" " kingdom	28	39½	7	15½	10
Number of persons injured in district	34	104	15	64	16
Percentage of persons injured in district	14½	44½	6½	27½	7

A list of the fatal accidents, arranged in counties, is given at the end of this report.

Explosions of firedamp.—The fatal explosions numbered five, with the loss of one life each, as compared with two, with the loss of three lives, the previous year.

The first of these happened at No. 3 Pit, Sundrum, Ayr Colliery, in a part of the splint seam where stooping was being carried on. Naked lights were in use, although firedamp had been found in the vicinity some time previously and although, owing to the fallen roof, there was a difficulty in getting an air current taken into the place. It appears that the miners had worked all day up till 1.30 p.m., when one of them went up to the edge of the waste where he had been at work half an hour previously. On reaching this point he ignited some firedamp and caused the explosion which injured him, together with his brother and a roadsman who with the fireman were at work 20 yards distant from the point of ignition. The miner who was beside the fireman died four days after receiving his injuries. In the circumstances safety lamps ought to have been used as a precaution, and after the explosion the manager agreed to use safety lamps in all the sections where stoops were being taken out.

The second fatal explosion happened in No. 5 Pit, Portland, or the Nursery Pit, Kilmarnock. The deceased and another miner worked together on the afternoon shift, and they were engaged splitting a stoop in a section of the pit where, according to the fireman's statement, firedamp had not been found for several years. They were finishing putting a four-yard wide place through the stoop when some firedamp ignited at one of their naked lights. Both men were injured by the explosion, and one of them subsequently died. At the time of the explosion the ventilation was deranged owing to an outburst of water having closed the ordinary airway, and it appears that no visit of a fireman had been made to this working place for 12 hours previous to the explosion, the fireman on the afternoon shift having become unwell and gone home. The day after the explosion I found firedamp in

the waste workings, nine yards distant from where the men were at work, and if the firemen had made the statutory inspections the firedamp which ignited might have been detected.

The next fatal explosion happened in No. 10 Pit, Common, Cumnock, and took place shortly after the close of the strike. It appears that after his day's work was over, the deceased went into a place where he had worked previous to the strike to look for a pick which he had left there. Owing to water having risen in these workings, which were to the dip, work had not been resumed in them, and consequently no inspection thereof had been made by the fireman. Without having made known his intention or ascertained whether or not these workings were safe to enter, he proceeded to his old working place, and having passed it, his naked light ignited some firedamp, and he was so severely injured that he subsequently died.

The fourth fatal explosion happened in No. 2 Pit, Ellismuir, Baillieston, in the Kiltongue seam. The deceased had just reached his working place to commence his day's work, and was passing along the working face when his naked light ignited some firedamp which, if the fireman's statement is correct, had accumulated since the latter made his inspection an hour previously. Owing to a fall of roof in the "cundie" between this wall and the adjoining one, there was practically no air current passing, and had this fall been cleared away, as it should have been, in all probability the explosion would not have happened.

The fifth fatal explosion occurred in an ironstone pit, No. 14 Pit Common, near Cumnock, and by it one man lost his life, and the under manager and other two workmen, were injured. During the strike of the colliers this pit was stopped for six weeks, and when work was resumed it was found that a very heavy fall of roof had taken place at the top of a self-acting incline, which was also an airway. The redding of the fall and renewing of the timbering occupied a week, and new timbering having been put up and some *débris* placed above it, the deceased was on the top of the timbering when his naked light ignited some firedamp which, apparently unknown to anyone, had accumulated since the fireman made his inspection three hours before. Firedamp is frequently found in this pit, and this cavity in the roof was a very likely place in which it might accumulate, but safety lamps were not used, neither was the precaution taken to erect a hurdle screen and so cause the air current to pass above the timbering. Both of these precautions ought to have been taken, as thereby the explosion would have been prevented.

The non-fatal explosions numbered 21 as compared with 31 and 42 during the two previous years, and resulted in the injury of 34 persons, including the 6 injured by the fatal explosions already referred to. Five of these happened in pits in which safety lamps are in use. The first occurred in Meiklehill Colliery, and was caused by the injured man opening his lamp and striking a match to relight it, contrary to the regulations. The second happened in Dechmont Colliery. It resulted in the injury of a contractor brusher and two of his men, and was caused by the contractor illegally firing a shot and apparently in an accumulation of firedamp, instead of sending for the fireman whose duty it was to fire all shots. The third happened in No. 3 Pit, Herbertshire, but it was of a very trifling description. The fireman and a brusher were about to fire a brushing shot, and the fireman, after making the required inspection, handed a match paper to the brusher to light the fuse. When the fuse ignited, the sparks kindled a small quantity of gas lying along the roof, and which the fireman had not detected with his safety lamp, and the brusher was slightly injured. The fourth non-fatal explosion in a safety lamp pit happened also in Meiklehill Colliery, and was apparently caused by one or other of the two miners injured illegally striking a match to smoke, or while smoking, as a tobacco pipe was afterwards found in the place where they had been working. The fifth happened in No. 2 Pit, Souterhouse, and was caused by the fireman illegally firing a shot in an accumulation of firedamp at the brushing face, and by it he and two miners were injured. In this case the gas was ignited while the fireman was lighting the fuse. The investigation of this explosion revealed a reckless disregard of the rules by all the persons concerned, and the owner, manager, overman, and two firemen have since been prosecuted and fined for contravention of the regulations.

In my reports for the last two years I called attention to the large number of prosecutions for contraventions of regulations intended to prevent explosions of firedamp. I am sorry to report that last year there has been a large increase in the number of these, there having been no fewer than 48 as compared with 27 during 1893. As a rule, the owners and managers do their utmost to enforce these regulations, but there are many workmen who seem to have not the slightest hesitation in breaking the rules in order to gratify their desire for a smoke, or to save themselves a little trouble or loss of time. I have expressed the opinion before, and I repeat it, that the large number of these violations of the statute is to a great extent due to the leniency with which offenders are as a rule dealt with in the sheriff courts.

It seldom happens that workmen are fined more than half the maximum penalty, although batches of them are frequently brought before the sheriff from the same colliery. In Meiklehill Colliery last year there were two explosions of firedamp, to which reference has already been made, and which were caused by men smoking or lighting matches. No fewer than nine of the workmen from this pit were at the same time brought before the sheriff at Dumbarton for having pipes and matches in their possession, and they were let off with a fine of from 10*s.* 6*d.* to 21*s.* each. Another miner from this colliery was charged with smoking, with having a key for unlocking his lamp, with unlocking his lamp, and with having matches in his possession, and by way of punishment he was dismissed with an admonition. Again, a miner from No. 3 Pit, Herbertshire, was for the third time convicted at Stirling for smoking in the mine, and was fined 25*s.*, after having been fined 30*s.* for his first offence and 10*s.* for his second. It neither encourages the managers to enforce the regulations, nor does it act as an effective deterrent to those workmen who will not voluntarily comply with the rules made for their own safety and that of their fellows for the sheriffs to treat these offences so lightly, and when workmen will persist in repeatedly ignoring the requirements of the statute at the risk of their own lives and those of others, it seems to me that it is absolutely necessary that as empowered by section 60 of the Coal Mines Regulation Act, the sheriffs should sentence offenders to imprisonment without the option of a fine.

There is much more than the punishment of offenders that requires to be considered in connection with this subject, because where workmen have not learnt either by compulsion or by persuasion to obey the rules, it cannot possibly be expected that even the most stringent statutory regulations will have the required effect in preventing accidents. In certain quarters there is a great demand for increased government inspection and fresh mining legislation, but if some of the so-called miners' friends would direct their energies so as to induce them to make an honest effort to comply with the existing regulations, and at the same time officials were more particular in observing and enforcing the requirements of the present Act, more good would be done to prevent accidents than would be done by increasing the number of inspectors tenfold.

Falls of roof and side.—The fatal accidents by falls numbered 19, being the same number as during the previous year, while the non-fatal similar accidents numbered 100, compared with 102 for the year 1893. The following tables give an analysis of the different kinds of these accidents in mines worked by the "stoop and room" and the "long wall" systems, with the corresponding figures for the previous year.

Fatal Accidents by Falls.

—	Number of Accidents in Mines worked "long-wall."		Number of Accidents in Mines worked "stoop and room."		Total Number of Accidents.	
	1894.	1893.	1894.	1893.	1894.	1893.
Falls of roof at working face	9	7	4	3	13	10
" on roads	1	3	2	1	3	4
Falls of side at working face	—	1	3	4	3	5
" on roads	—	—	—	—	—	—
Total	10	11	9	8	19	19

Non-fatal Accidents by Falls.

—	Number of Accidents in Mines worked "long-wall."		Number of Accidents in Mines worked "stoop and room."		Total Number of Accidents.	
	1894.	1893.	1894.	1893.	1894.	1893.
Falls of roof at working face	35	30	10	15	45	45
" on roads	8	5	6	4	14	9
Falls of side at working face	17	27	21	20	38	47
" on roads	3	1	—	—	3	1
Total	63	63	37	39	100	102

It will be seen from these tables that there were 16 deaths from falls of roof, and 3 deaths from falls of side, while there were 59 non-fatal accidents from falls of roof, and 41 from falls of side. Again, of the total number of 119 accidents by falls, 99 took place at the working face (including the brushing face in "long wall" workings) and 20 on roadways. During the previous year 107 of these accidents happened at the working face, and 14 on roadways. It is at the working face, therefore, that by far the greater number of accidents by falls take place, and where special precautions require to be taken to prevent them. The inspectors of mines are now almost unanimously of opinion that systematic propping and spragging at the working face should be made compulsory in every case; and until these obvious and simple precautions are enforced, there seems little prospect of a decided decrease in the kind of accident which is annually responsible for about 40 per cent. of the deaths in the mines of the kingdom. Such a decrease I am confident would at once become apparent when the simple and inexpensive precautions which are imperatively required are brought into operation.

Shaft accidents.—The fatal accidents in shafts numbered 9, as compared with 6 for the preceding year. The first happened in No. 2 Pit, East Parkhead, which was a new shaft in course of being sunk. The first work of the men on the shift during which it occurred was to clear away the *débris* caused by five gunpowder and two gelatine dynamite shots which had just been fired by the previous shift, and after firing other two powder and one gelatine shots, the deceased and the man who was injured seem to have been making use of an old shot hole, the bottom part of which still remained. The deceased held a jumper in the hole, and when his neighbour struck it with a hammer a violent explosion took place and caused the accident. Apparently the old shot hole contained an unexploded charge of explosive, unknown to anyone. The second also happened in a sinking pit, No. 4, Bothwell Castle, and was caused by the sinking kettle, apparently made to oscillate by a strong wind, catching the wooden bars which formed the shaft fence at the ground level. These bars were torn out of position by the kettle being raised, and one of them fell down the shaft, a depth of 33 fathoms, and inflicted fatal injuries on one of the sinkers.

No fewer than three men, two bottomers and an overman, lost their lives by the cage coming down upon them while they were attempting to cross from one side of the pit bottom to the other through the cage seat. The bottomers were employed at Broomhouse and No. 6 Pit, Govan, and a roadway round the shaft was provided in each case. At Milnwood, No. 2 Pit, where the overman was killed, there was no roadway from one side of the shaft to the other, as there ought to be in every case, but the manager had given instructions that any person requiring to cross the shaft should do so through the cage when it was in the bottom. This the overman failed to do.

A pony driver at Canonbie Colliery, without having authority to do so, put a loaded hutch on the cage and signalled it away; but the hutch, not having been put properly on the cage, caught at the "door heads" and fell upon him, killing him instantaneously. At Westburn Colliery, a young miner, whilst foolishly attempting to go down a blind pit used only for lowering coals, in some unexplained way lost his hold and fell to the bottom, a distance of 8½ fathoms, and was killed. He had been warned against doing this, and a separate stair pit was provided for the ingress and egress of the workmen employed in this section of the workings. At Bardykes Colliery, four men were engaged repairing the shaft, and having gone down on the top of the cage a certain distance it was found necessary that one of them should go into the lower deck to guide the cage past a broken slide. While climbing down the buntons for this purpose the deceased, a shaftsman, missed his footing and fell to the bottom, a distance of 36 fathoms.

The last of the fatal shaft accidents happened at No. 2 Pit Bank, New Cumnock, and by it a bottomer fell from a mid-working along with a loaded hutch. The dip cage alone was used at this mid-working, and there was a road from one side of the shaft only. The fence guarding the entrance to the shaft was, as required by a new special rule established throughout the district six months previously, connected with an indicator in the engine-house, and which showed to the engineman whether it was open or shut. It appears that the engineman, in response to the bottomer's signal, lowered the cage containing an empty hutch to the mid-working, and the bottomer, after opening the fence, took off the empty hutch. Shortly thereafter the signal "one" was given without the fence having been closed, and the engineman thereupon slowly raised the cage until it reached the pithead empty, and the indicator all the time showing that the fence was open. The pitheadman then shouted down to the deceased, a distance of 17 fathoms, but getting no reply he went down in the cage and found the fence open, but no trace of the deceased, who alone had been at the mid-working, and whose body was afterwards found in the bottom of the shaft on the top of a hutch. The bottomer, evidently thinking that the cage was at the mid-working, pushed the loaded

hutch into the open shaft and fell after it, but no one can tell why he gave the signal "one" to raise the cage after drawing off the empty hutch. This accident illustrates how accidents will happen even when the most carefully devised regulations are made to prevent them. By the new special rule referred to, the bottomer is forbidden to signal away the cage from a mid-working until after he has closed the gate fencing the shaft, and, as a check upon the bottomer, the engineman is forbidden to take the cage away from a mid-working unless the indicator shows that the gate has been closed. In this case both the engineman and the bottomer at the same time violated these regulations, and thus the accident happened.

The non-fatal shaft accidents numbered 11, and by them 15 persons were injured. The only one of these calling for special mention happened at Viewpark Colliery, and might have resulted in much more serious consequences than a severe shock to four miners who were rapidly lowered into the bottom. It seems that the engineman, while lowering these men, turned suddenly faint and lost control of the engine, which continued to run until the up-coming cage was drawn over the pithead pulley and jammed against the drum.

Miscellaneous accidents underground.—Only six of these accidents had a fatal termination, as compared with eight the previous year. Of these, four were caused by runaway hutches on inclined roads, and another caused the death of a pony driver who was crushed between a hutch and the side of the road.

The other which ended fatally took place at No. 2 Pit, Lanemark, New Cumnock, and was caused by a shock of electricity, being the first fatality from an accident of this nature in the district. The haulage in a dook driven to the dip of the main haulage level and situated some 1,400 yards from the shaft is performed by electric motors placed at the top of the dook and connected with the dynamos on the surface by means of copper cables carried along the side of the haulage level. One cable of 19 wires of No. 16 Birmingham wire gauge, insulated by means of a rubber covering, aud the whole enclosed in a lead tube, was used as a lead from the dynamos to the motors, while the return conductor consisted of two cables each of 19 wires of No. 18 B W G, insulated and covered with lead in the same manner. At the part of the haulage road where the accident happened the intake or lead cable was about 4½ feet above the level of the rails, while the two return cables were 4 inches above the intake one. The rise side rail was a foot from the side of the road along which the cables were carried. It appears that the deceased and several other miners, after their work was over, were coming out the main haulage level and were riding on a "race" of hutches, contrary to regulations, which was being drawn by a horse. The "race" was stopped to put a hutch on the rails, and it seems that the deceased was stepping between it and the hutch in front when he stumbled, and his face coming in contact with the cables, he received a shock which proved fatal. Previous to this, several workmen and horses had received shocks by coming in contact with the cables, but apparently no bad effects had followed. After the accident, electrical experts tested the cables and found that owing to numerous breaks in the insulating medium, the current of 500 volts was being freely transmitted through the lead covering. A current of this intensity, according to skilled evidence, is not dangerous to a person in good health; but seeing that this accident had happened, I insisted upon the owners, as recommended by the experts, getting a new intake cable, and this, after a formal notice in terms of section 42 of the Coal Mines Act had been served upon them, they agreed to put in.

The non-fatal miscellaneous underground accidents numbered 63, and by them 64 persons were injured. Six of these were caused by a spark from a naked light falling upon gunpowder which the injured persons were handling, and of these six, three happened after the establishment of a new Special Rule prohibiting workmen from smoking or permitting a naked light to remain on their head while charging shot-holes or handling explosives not contained in a case or canister. Six persons were also injured by their hutches while drawing in front of them, and two of these accidents happened after the establishment of a new Special Rule prohibiting this dangerous practice.

Accidents above ground.—There were 10 fatal surface accidents, as compared with sever the preceding year. One man was run over by a locomotive engine while, as was supposed, under the influence of drink, and another man supposed to have also been affected by drink fell off the top of a range of boilers into the stoke-hole and received fatal injuries. Three men lost their lives by being crushed between railway waggons, and a boy, 13 years of age, was killed while on the top of a waggon picking stones by a waggon shifter incautiously moving it forward beneath a gangway which caught his head. An engineman was killed by a hutch falling down a hoist at the pithead, a labourer having pushed forward the hutch, expecting the cage to have been at the top when it happened to be at the bottom. Another engineman was killed by being caught by the connecting rod of a pumping engine while foolishly attempting to pass beneath it when it was in motion. At Shields Colliery a waggoner, while attempting to insert a 4-inch prop, 5 feet long, into the wheel of a railway

waggon to arrest its motion, was struck by the end of the prop and knocked in front of the hinder wheel which ran over him. To prevent accidents of this nature which have repeatedly happened, a new Special Rule had been established four months previously, and providing that only pointed wooden sprags, not exceeding 3 feet in length, should be used for the spragging of railway waggon wheels where spragging is necessary. The deceased directly violated this rule.

The last fatal accident that happened above ground caused the death of the manager of Wellshot Colliery. At No. 1 Pit, the winding engine is geared to the drum shaft by spur wheels, the drum and fly-wheel being each provided with a break. The manager happened to be in the engine-house talking to one of the overmen, and while the engineman was winding a hutch of stones in the dip cage the crank shaft of the engine broke. The engineman shut off the steam and he and the overman ran out of the front door, while the manager ran out of the side door, passing on his way the handle of the drum break. The weight of the hutch of stones being greater than that of the empty hutch in the rise cage, the dip cage ran rapidly back to the bottom, and the momentum was sufficient to carry the rise cage over the pithead pulley, and it fell on the manager and killed him. If he had had the presence of mind to stop and apply the drum break the accident would not have happened. It was not a proper thing for the manager to meet with his overman to talk over matters in the engine house, which is of very small dimensions, as the attention of the engineman might thereby have been diverted from his duties and a mistake made.

The non-fatal accidents above ground numbered 16, by each of which one person was injured.

Besides accidents comprised under the Coal Mines Regulation Act, I received notice of the death of a boy who, after working hours, had apparently been climbing up a pithead frame when he fell and received fatal injuries, also of another boy, not employed at the mine, who fell off a "race" of hutches on a surface haulage road and was run over. A miner died from natural causes in No. 1 Pit Calderbank, and there were two non-fatal surface accidents to persons not employed at the mine.

Prosecutions.

There were 77 prosecutions during the year, and of these 15 were either at my instance or by the Procurators Fiscal, while the remaining 62 were by the Procurators Fiscal, from information laid by the owners or managers. The following are lists of these prosecutions, No. 1 list being cases taken at my instance or by the Procurator Fiscal, and No. 2 list being those taken by the owners :—

No. 1 LIST.

Name, Occupation, and Mine.	Place of Hearing and Date.	Contraventions.	Result of Trial.
William Aitken, fireman, No. 1 Pit, Saracen.	Glasgow, 9th January	General Rule 6.—Failing to fence the entrance to an old road.	Not proven.
D. M. Mowat, agent, Orbiston Colliery.	Hamilton, 13th and 14th Feb.	Sec. 12 (1).—Making illegal deductions -	Fined 2*l*., but on appeal the decision was reversed.
Alexander Thomson & Co., owners, East Plean Colliery.	Stirling, 10th April -	General Rule 24.—Failing to have an engineman in attendance.	Fined 5*l*.
Alexander Barrie, manager, East Plean Colliery.	Ditto	Ditto ditto	Charge withdrawn.
John Stevenson, fireman, Bourtreehill Colliery.	Kilmarnock, 16th Apr.	General Rule 4.—Failing to inspect the workings before work began.	Fined 5*s*.
Thomas Wilson, overman, Bourtreehill Colliery.	Ditto	Special Rule 7.—Failing to see that the fireman made his inspection.	Fined 1*l*.
John Walker, manager, Bourtreehill Colliery.	Ditto	Special Rule 2.—Failing to see that the fireman made his inspection.	Fined 1*l*.
H. Shaw Dunn, junr., manager, Caprington Colliery.	Kilmarnock, 28th May	General Rule 1.—Failing to provide adequate ventilation.	Fined 5*l*.
Archibald McPhee, overman, Mainhill Colliery.	Airdrie, 1st June -	Special Rule 7.—Failing to clear away falls, which caused inadequate ventilation.	Fined 1*l*.
Alexander Mackay, fireman, Mainhill Colliery.	Ditto	General Rule 4.—Failing to enter in report book the condition of the roof.	Fined 1*l*.
Alexander Forbes, manager, Orbiston Colliery.	Hamilton, 12th October, and 27th to 29th November.	General Rule 1.—Failing to provide adequate ventilation.	Not proven, but the decision has been appealed against.
Thomas Donnachie, drawer, Hallhill Colliery.	Airdrie, 29th Nov. -	New Special Rule 5.—Drawing in front of his hutch.	Fined 1*l*.
Thomas Hamilton, chain runner, Blackstone Colliery.	Paisley, 11th Dec. -	Special Rule 72.—Riding on hutches without permission.	Fined 10*s*.
William Haney, chain runner, Blackstone Colliery.	Ditto	Ditto ditto	Fined 10*s*.
William Morris, overman, Milnwood Colliery.	Hamilton, 11th Dec. -	General Rule 8.—Allowing naked lights where safety lamps should have been used.	Fined 1*l*.

No. 2 LIST.

Name, Occupation, and Mine.	Place of Hearing and Date.	Contraventions.	Result of Trial.
R. McGuiness, miner, Abercorn Colliery.	Paisley, 8th January	General Rule 22.—Failing to set sprags.	Fined 30*s.*
Neil Collins, miner, Abercorn Colliery.	Ditto	Ditto ditto	Fined 30*s.*
William Campbell, senr., miner, No. 11 Pit, Gartshore.	Dumbarton, 16th Jan.	Special Rule 87 (2) and (4).—Opening his safety lamp and having matches.	Fined 2*l.*
William Campbell, junr., miner, No. 11 Pit, Gartshore.	Ditto	Ditto ditto	Found guilty. Admonished.
Peter McAtee, miner, No. 11 Pit, Gartshore.	Ditto	Special Rule 87 (4).—Having matches in the mine.	Fined 1*l.*
John Connolly, miner, No. 11 Pit, Gartshore.	Ditto	Ditto ditto	Fined 1*l.*
Thomas Madden, miner, Quarter Colliery.	Stirling, 23rd January	Special Rule 87 (6).—Smoking in the mine -	Fined 2*l.*
Hugh McGarry, miner, Aitkenhead Colliery.	Glasgow, 30th Jan. -	General Rule 22.—Failing to set sprags -	Fined 10*s.*
Campbell Prentice, miner, Aitkenhead Colliery.	Ditto	Ditto ditto	Fined 1*l.*
John O'Neil, senr., miner, Tannochside Colliery.	Airdrie, 8th Feb. -	Special Rule 87 (2).—Unlocking a safety lamp	Fined 10*s.*
David Wyper, miner, Tannochside Colliery.	Ditto	Ditto ditto	Fined 10*s.*
Robert Pennycuik, pony driver, Tannochside Colliery.	Ditto	Ditto ditto	Fined 10*s.*
Bernard McGovern, miner, Tannochside Colliery.	Ditto	Special Rule 87 (6).—Having a pipe in his possession in the mine.	Fined 15*s.*
John O'Neil, junr., miner, Tannochside Colliery.	Ditto	Special Rule 87 (2).—Unlocking his safety lamp.	Admonished.
George Ramsay, fireman, Great Western Colliery.	Dumbarton, 26th Feb.	General Rule 4.—Failing to record in the report book the presence of firedamp.	Fined 2*l.*
David Lindsay, miner, No. 4 Pit, Drumpeller.	Airdrie, 1st March -	General Rule 12 (*b*).—Taking loose gunpowder into the mine.	Fined 10*s.*
William Goldie, miner, No. 4 Pit, Drumpeller.	Ditto	Ditto ditto	Fined 10*s.*
Patrick Fitzsimmons, miner, Nethercroy Colliery.	Dumbarton, 5th March	Special Rule 74.—Failing to set props when directed by the fireman.	Fined 21*s.*
William Jarvis, brusher, Herbertshire Colliery.	Stirling, 6th March -	Special Rule 87 (2).—Unlocking his safety lamp.	Thirty days' imprisonment.
Andrew Kay, fireman, Garrochhill Colliery.	Ayr, 26th March -	General Rule 7.—Failing to withdraw workmen. Special Rule 38.—Permitting miners to enter working place in which there was firedamp.	Fined 21*s.* for each offence.
David Brown, miner, Herbertshire Colliery.	Stirling, 27th March -	General Rule 22.—Failing to set sprags -	Fined 1*l.*
D. Stevenson, brusher, Bothwell Castle Colliery.	Hamilton, 3rd April -	General Rule 10 (iv.)—Having matches in his possession.	Fined 1*l.*
Patrick Ireland, miner, No. 3 Pit, Gartshore.	Dumbarton, 10th April	Special Rule 87 (4) and (6).—Having matches and a pipe.	Fined 1*l.*
Edward McFalls, miner, Quarter Colliery.	Stirling, 22nd May -	Special Rule 87 (6).—Having a pipe -	Fined 10*s.*
Alexander Ritchie, miner, Dumbreck Colliery.	Ditto	Special Rule 87 (2).—Unlocking his safety lamp.	Fined 30*s.*
Alexander Barrie, miner, Barrwood Colliery.	Ditto	Special Rule 87 (3) and (4).—Having a contrivance for opening his lamp, and matches.	Fined 25*s.*
Alexander Linn, miner, Herbertshire Colliery.	Ditto	Special Rule 87 (6).—Smoking in the mine -	Fined 25*s.*
Robert Jaap, miner, Meiklehill Colliery.	Dumbarton, 23rd May	Special Rule 96.—Introducing into the mine a stranger, without permission.	Fined 10*s.*
Robert Arbuckle, miner, Hamilton Palace Colliery.	Hamilton, 1st June -	Special Rule 73.—Failing to set props -	Fined 1*l.*
Hugh Cunningham, miner, Tannochside Colliery.	Airdrie, 15th June -	Special Rule 87 (2).—Unlocking his safety lamp.	Fined 15*s.*
Nine miners from Meiklehill Colliery.	Dumbarton, 22nd June	Special Rule 87 (4) and (6).—Having pipes or matches.	Eight fined 21*s.* each and one 10*s.* 6*d.*
James Ralston, miner, Nethercroy Colliery.	Dumbarton, 25th June	Special Rule 87 (6).—Having a pipe. -	Fined 21*s.*
Joseph Hodge, drawer, Gartshore, No. 3 Pit.	Dumbarton, 27th June	General Rule 10 (iv.)—Having matches in his possession.	Fined 1*l.*
William Connell, miner, Meiklehill Colliery.	Dumbarton, 2nd July	Special Rule 87 (2), (3), (4) and (6).—Unlocking his lamp, having matches, a key, and smoking in the mine.	Found guilty and admonished.
Joseph Hodge, miner, Gartshore, No. 3 Pit.	Dumbarton, 9th July	Special Rule 87 (4).—Having matches -	Fined 21*s.*
Alexander Forsyth, brusher, Dechmont Colliery.	Hamilton, 27th July -	General Rule 10 (iv.) and 12 (*f*).—Having matches, and illegally firing a shot.	Fined 30*s.*
James McCarroll, drawer, Gartshore, No. 2 Pit.	Dumbarton, 2nd Nov.	General Rule 10 (iv.)—Having matches -	Fined 1*l.*
James McNeil, miner, Meiklehill, Colliery.	Dumbarton, 19th Nov.	Special Rule 89.—Working with a damaged safety lamp.	Not proven.
Andrew McDade, miner, Garscube Colliery.	Ditto	Special Rule 87 (6).—Having a pipe -	Fined 21*s.*
David Porteous, miner, Garscube Colliery.	Ditto	Ditto ditto	Fined 21*s.*
Edward Boyle, James Gibson, and John Morrison, miners, Daldowie Colliery.	Airdrie, 20th Nov. -	Special Rule 72.—Riding on hutches without permission.	Fined 1*l.* each.
Peter Shevlin, miner, Daldowie Colliery	Ditto	Ditto ditto	Fined 10*s.*

Name, Occupation, and Mine.	Place of Hearing and Date.	Contraventions.	Result of Trial.
Thomas Cairns, miner, Wester Gartshore Colliery.	Dumbarton, 23rd Nov.	General Rule 12 (*b*).—Taking loose gunpowder into the mine.	Not proven.
Patrick Duffy, miner, Wester Gartshore Colliery.	Ditto	Ditto ditto	Not proven.
James Kelly, miner, No. 11 Pit, Gartshore.	Ditto	Special Rule 87 (4) and (6).—Having matches and a pipe.	Fined 21*s*.
John McBride, miner, No. 11 Pit, Gartshore.	Ditto	Ditto ditto	Not proven.
Peter Paterson, miner, No. 11 Pit, Gartshore.	Ditto	Ditto ditto	Not proven.
John Carr, drawer, No. 11 Pit, Gartshore.	Ditto	Special Rule 87 (6).—Having a pipe	Fined 21s.
Robert Young, miner, Meiklehill Colliery.	Ditto	Special Rule 87 (4).—Having matches	Admonished.
Dugald Fraser, miner, Meiklehill Colliery.	Ditto	Ditto ditto	Admonished.
John Cunningham, miner, Tannochside Colliery.	Airdrie, 13th Dec.	Special Rule 87 (2).—Unlocking a safety lamp	Fined 1*l*.
John McCusker, miner, Tannochside Colliery.	Ditto	Ditto ditto	Fined 1*l*.

In my report last year reference was made to the test case which was brought up by your instructions against the agent of Orbiston Colliery. The point raised was the legality of making a uniform deduction from each hutch of coal as an equivalent for dirt or stones, irrespective of the actual weight of stones which it might contain. The sheriff substitute at Hamilton found the charge proved, and imposed a fine of 2*l*., and this decision was reversed on appeal to the Court of Session. The following are the opinions of the judges before whom the appeal was brought :—

Justiciary Appeal for David Marr Mowat, in causa Ronaldson *v.* Mowat.

Opinion of Lord Wellwood.

We have been told that our opinion is desired on a question of general importance, viz.: Whether the agreed-on deduction of 56 lbs. per hutch at the appellant's colliery is legal or not. But it must be remembered that this is an appeal against a criminal conviction, and must be so dealt with whatever our view on the general question may be. In my opinion the conviction is bad, apart from the legality or illegality of the deduction; but in the meantime I shall deal with the deduction.

I. The complaint is framed on the footing that the miners' wages depended on the amount of coal gotten by them, that being the mineral contracted to be gotten; that they despatched to the pithead hutches which, after deducting so many pounds for stones and dirt ascertained to be contained in them, were found to contain a certain weight of coal, and that instead of paying the miners according to the actual weight of coal so ascertained, the appellants in each case deducted 56 lbs. from the gross weight of the contents of the hutch.

Take, as an example, Rooney's hutch. The gross weight, including tare, was $12\frac{3}{4}$ cwt., deducting $4\frac{1}{4}$ cwt. for tare, left $8\frac{1}{2}$ cwt. The amount of dirt in the hutch, according to the evidence for the complainer, was 23 lbs. only. Deducting that from $8\frac{1}{2}$ cwt., left 8 cwt. 33 lbs. Rooney was not paid upon that weight, but upon 8 cwt., 56 lbs. having been deducted from the weight of the total contents of the tub.

The appellants entirely dispute that the hutches in question only contained the quantity of stones and dirt spoken to by the complainer's witnesses; and it is proved and admitted that no note was taken of the dirt in the dross. But supposing, for the sake of argument, that the complainer's figures are correct, the question then arises whether the deduction of 56 lbs., to which these miners amongst others had agreed, was a legal deduction or not. If it was a legal deduction, then that is an end of the case. If it was not a legal deduction, we may have to consider whether the facts proved support and square with the charge in the complaint.

I do not think there is any real difficulty, at least as regards this case, as to the construction of section 12 (1) of the Act of 1887. The first two paragraphs are as follows :—(*Reads.*) Reading the first paragraph in connexion with the second, I do not think it doubtful that the "mineral contracted to be gotten" (in this case coal) is contrasted with and does not include stones and dirt. The miners are to be paid according to the weight of the mineral contracted to be gotten, *i.e.*, *coal* brought up. If no agreement as to deductions is come to in order to ascertain the weight of coal, the stones and dirt in each case would require to be separated from the coal, which, if practicable, would be an inconvenient and expensive process alike to owners and miners.

To avoid this inconvenience the second paragraph provides for owners and miners agreeing on some special mode for fixing deductions to be made "in respect of stones and substances "other than the mineral contracted to be gotten which shall be sent out of the mine with "the mineral contracted to be gotten."

If deductions for dirt are agreed on, then, of course, they being deductions from the gross contents of the hutch, the gross contents must in the ordinary course be weighed, the weighing of the actual coal being dispensed with.

It is manifest that any special mode affixing deductions must dispense with the ascertainment by weighing of the actual amount of coal in each hutch; and, strictly speaking, the owner under such an agreement will not pay the miners in all cases according to the precise amount of coal brought up by each. In a word, such special mode must be based upon the average amount of foreign matter which overhead might be expected to be contained in a hutch according to the experience of practical miners. It is a necessary consequence of taking an average that in some cases the miner may not be paid according to the actual weight of coal brought up, He may be paid for more or less coal than on examination would be found to be contained in his hutch.

In the present case the owners and the miners, the parties best qualified to judge, are agreed that a uniform deduction of 56 lbs. is fair, and we are asked by the complainer to say that this special mode of ascertaining the deduction to be allowed, which seems to have given satisfaction to the men for many years, and of which the complainer never hitherto thought it his duty to complain, is so unfair and illegal that the appellants must be criminally convicted for having agreed to it.

I have no hesitation in saying that in my opinion the deduction, based as it was on average satisfactory to all concerned, was both legal and fair. I think the sheriff's judgment proceeds upon grounds which would make it impossible in any case to fix a deduction by way of average; and I think further he has misapplied the English judgments to which he refers. He says (p. 21), after referring to the case of *Kearney*: "Here the question is as to "the legality of uniform deduction of ½-cwt. per hutch, no attempt being made to separate "and weigh the dirt. I cannot distinguish this case from *Kearney's*. Unless it can be "shown that the actual amount of dirt does not exceed the amount reckoned for deduction, "it is clear that the miner is bargaining to have a certain payment deducted which the "Statute prohibits him from bargaining about." If this were sound, every deduction which depended upon averages would be illegal; and no other practical mode being suggested the parties would have to revert to weighing the amount in each hutch. The sheriff proceeds to a certain extent upon the fact that one seam of coal is sometimes cleaner than the others. But the answer seems to be that the miners are not confined to working one seam, and the average is taken for the whole pit with its one pithead. The complainer's witness, Barron, says (p. 30 E.): "We must have the same rate of deductions for the three seams having the same pithead.

The sheriff further indicates that an average to be legal must be an average referred to each miner and his own labour alone. The complainer himself repudiates it (p. 37 G.): "You could not have a rate of deduction for each man in a large colliery." The Statute seems to contemplate such a general agreement as here exists and not a separate agreement with individual miners.

The sheriff then proceeds: "If the average is such that it means an average between his "own work and the work of other people working in other places and in seams where the "coal sent to the surface differs in the amount of dirt it contains, *the result must be that in* "*some cases the average means a deduction from the coal produced.* In this case no "average was struck or attempted to be struck. A rough estimate was made and made at a "time when the cleanest seam at present being worked was not opened." Here again the sheriff's view seems to me to make an agreement by average impossible. If an agreement is illegal wherever it can be said that *in some cases the average means a deduction from the coal produced* all deductions by average will be illegal.

The cases cited in the sheriff's note have really no application. The case of *Bourne* v. *Netherseal Colliery Company, Limited*, 20 Q.B.D. 606, and 14 App. Cases, 228, merely decided under the Act of 1872, that it was illegal to contract that the miners should not be paid for slack, *i.e.*, dross, the reason being that slack is part of the coal, the mineral contracted to be gotten.

In the case of *Kearney, Whitehaven Colliery Company*, 1 Q.B., 1893, p. 700, the agreement did not proceed on average or provide for a deduction, it involved total forfeiture of the whole of the coal in the hutch tested if it contained 35 lbs. of dirt. Justice A. L. Smith says (p. 714): "What has been done is this, they do not weigh for dirt "every tub which comes to the top, but they give the men the benefit of 19 out of 20 tubs. "They test about one tub in twenty, no matter by what man it is sent up. If it contains

" no more than 25 lbs. of dirt then no drawback is made. If it contains more than 25 lbs. " and not more than 35 lbs., then a drawback of one half the weight of the coal in the tub " is made; and if it contains more than 35 lbs., then no payment at all is made for the coal " in the tub. Now, in my judgment, the House of Lords has practically put this " construction on the section—a pitman when paid by weight must be paid according to the " weight of the coal he actually wins, but by the proviso the master may agree with him to " make deductions from the total weight of what is sent up in the tub in respect of stones and " substances other than mineral. If all that had been done here was to agree upon some " mode of finding out what was the average amount of dirt in a given number of the tubs " sent up, without weighing every one of them, I do not think any difficulty would arise " under the section; but what was done was this, when a certain proportion of dirt was " found in the tub selected for testing, the actual coal in that tub was not paid for at all. " In face of that, can it be said that the provisions of section 12 have not been disregarded? " I am of opinion that they have."

The case is clearly not in point. Deduction based on average implies that the deduction so fixed represents dirt. Open forfeiture of payment for coal, the weight of which has been ascertained by weighing, is a very different thing. The two decisions to which I have referred proceeded on the footing that the so-called deduction was an undisguised agreement that payment should not be made for an ascertained quantity of coal brought up and therefore illegal.

II. Even if the deduction were illegal as being made on a wrong basis, it does not follow that the conviction can stand. Looking to the complaint alone, I cannot say that it is irrelevant; but the facts proved do not support the charge. Reading the complaint one would assume that the coal was weighed by the appellants in pursuance of their usual system, and that they failed to pay according to the weight so ascertained. But it appears from the evidence that this process was exceptional, and was performed under the instructions of the complainer and according to his directions. It must be remembered that so far as regards the complaint and conviction we have only to do with the cases of the four miners named in the complaint. The coal was weighed under the directions of the prosecutor, and I think it is for him to show that it was fairly weighed, and that the amount of dirt and stones did not amount to 56 lbs., the deduction made by the appellants. Now it appears from the proof that the dirt said to have been found in the hutches and weighed was merely the dirt in the *round coal*, and that no deduction whatever was made for dirt in the dross and no attempt to discover the quantity of dirt in it. Now it is proved by analysis that while the average amount of dirt and stones in the round coal is comparatively small, the average amount of dirt and stones among the dross in specimens analysed amounted to no less than 128 lbs. per hutch. It is therefore, in my opinion, not proved that the deduction of 56 lbs. exceeded the amount of dirt in the hutches in question.

Suppose it did, is this experiment with four hutches *probatio probata* that the average agreed on was excessive? What took place did not fairly represent the appellants' system. The appellants' system may or may not be legal, but it has not been properly put in issue in this complaint.

Therefore, even if I were of opinion that the deduction was not covered by the Statute, I should not be prepared to sustain the conviction.

In conclusion, I must observe that I think the concluding part of the agreement as to forfeiture in the event of more than 25 lbs. of dirt being found in round coal is illegal; but with that we have nothing to do in the present case, and I fancy that in practice it is very seldom that such a case occurs.

Opinion by Lord Adam.

I concur in the result of the opinion of Lord Wellwood, but as the case is of importance, I think it also right to state shortly the grounds of my opinion. In the course of the discussion we were referred to two English cases of the highest authority as throwing light on the construction of the clause with which we are concerned.

The first of these cases, the Netherseal Coal Company, arose upon the construction of the 17th section of the Mines (Coal) Regulation Act of 1872, which is the corresponding clause to the 12th section of the present Act under which the present case arises.

In that case I think it was established:—

(1.) That the words " mineral gotten by them " meant the contents of the tub or hutch, as sent up by the miners, and that it was the contents of the tub or hutch, as so sent up, that was to be truly weighed.

(2.) That the owner might lawfully agree with the miners that deductions should be made from the minerals so gotten in respect of stones, &c., other than the mineral contracted to be gotten, viz., coal, but that such deductions must be ascertained in the manner provided by the Act, that is in that Act by the bankman and weigher or checkweigher.

(3.) That any deduction made which involved that the miner was not paid according to the weight of the mineral contracted to be gotten was illegal. But

(4.) That the whole agreement was not illegal in respect of an illegal condition, but that such illegal condition was not enforceable.

The second case was that of *Kearney*, which arose under the present Act, and in which it was held :—

(1.) That the miner must be paid according to the weight of mineral in the tub or hutch.

(2.) That deductions might be made from the total weight of mineral in respect of stones, &c., &c.

(3.) That agreements might be made with reference to the deductions to be made from such total weight.

The decisions in these cases may not be binding on us as authorities, but they are cases in the construction of a British Statute, and I should have no hesitation in following them, even if I doubted their soundness, which I may respectfully say I do not; I shall therefore give effect to them so far as they apply in considering the present case.

The agreement between the owner and miners is in this case in the following terms :—

One half hundredweight to be deducted from each hutch, and if any hutch contains 25 lbs. of dirt or foreign material the whole hutch to be deducted.

Now, as regards the latter of these conditions, I have no doubt, on the authority of the cases of *Netherseal* and *Kearney*, that it is illegal in respect that it necessarily involves a forfeiture of mineral contracted to be gotten. No question, however, arises in this case under that condition of the agreement, and I think, also under the authority of these cases, that the fact of that condition being illegal does not render the whole agreement illegal.

The question, therefore, which we have to consider, is whether the first condition is illegal. Now that condition, as I read it, stipulates that half a hundredweight shall be deducted from each hutch in respect of dirt and foreign material.

The condition, therefore, implies in the first place that each hutch as sent up by the miner shall be weighed. In the next place, that the deduction is to be made in respect of stones &c. other than the mineral contracted to be gotten—a matter about which it is quite legal to contract.

In the third place, that the deduction is to be ascertained in a manner provided for by the Act, because the Act provides that the deductions may be determined in such special mode as may be agreed upon between the owner, agent or manager of the mine on the one hand, and the person employed in the mine on the other—a provision, I may remark, which was not contained in the previous Act, and this mode of ascertaining the deductions has been agreed upon between the manager of the pit on the one hand and the persons employed in the pit on the other. So far, I think, the case is sufficiently clear and the agreement unobjectionable.

But it is said that under this condition a miner may not be paid according to the mineral contracted to be gotten by him, and that any condition which involves that contingency is invalid, as the Act requires that the miner shall be paid according to the weight of the mineral contracted to be gotten by him.

Now it is the fact that, under this condition, if one particular hutch only is taken into consideration, it may not contain half a hundredweight of dirt and foreign material, and consequently that the miner is not paid for the whole of the mineral contracted to be gotten, contained in that hutch.

But the condition is founded on the doctrine of average, and if the average is a fair average, it follows that the miner is in fact paid for all the material contracted to be gotten by him from the pit, the deficiency of one hutch being made up by the surplus of another, which in my opinion is all that the Act in any view requires.

It appears to me, therefore, that *ex facie* of the agreement there is nothing illegal about it. It deals with a matter about which the owner and miner were free to contract, and deals with it in a manner authorised by the Statute.

No doubt if the prosecutor were able to show that the average was not a fair average, and that under pretence of contracting as to deduction, for dirt and foreign material, the parties had in fact contracted that the miners were not to be paid for the whole mineral contracted to be gotten by them, the agreement might be illegal.

But I think it lies upon the prosecutor to prove this. He is challenging, and desires to get behind an *ex facie* valid agreement. Has he proved it in this case? I think not, for the reasons stated by Lord Wellwood, which I need not repeat; in fact I think it is sufficient to set aside this conviction that only the amount of round coal in the several hutches weighed was ascertained, but that no attempt was made to ascertain the amount of dirt which passed through the meshes of the riddle along with the dross, and which the evidence shows is in this pit very considerable. In these circumstances I do not see how it can be maintained that the prosecutor has proved that the miners were not paid on the actual weight of the mineral contracted to be gotten by them, and unless he has proved that this conviction cannot be sustained.

I concur, therefore, that this conviction should be set aside.

The Lord Justice Clerk concurred.

Another prosecution of importance was that against Mr. Alexander Forbes, manager of Orbiston Colliery. He was charged with a contravention of General Rule 1, by failing to provide adequate ventilation to clear out firedamp accumulated in a working place and in the stooped waste within 6 feet and 15 feet respectively of two working places where miners were at work. On account of conflicting evidence the charge relating to gas in the working place was found "not proven." With reference to the charge for permitting the miners to work in close proximity to bodies of gas in the stooped waste without any attempt having been made by bratticing or screens to clear it out, the prosecution held that the gas, by falls of roof or otherwise, was liable to be forced out upon the workmen and ignited by a defective safety lamp or a man illegally having an exposed light. It was further contended that, as decided by the case of *Brough* v. *Homfray*, it was necessary to keep safe not only the actual working places and roadways in use, but that so much of the mine must be kept so ventilated as to render the working places and travelling roads safe. For the defence it was held that General Rule 1 only requires the actual working places and travelling roads to and from those working places to be adequately ventilated, that there was very little danger of the gas being forced out upon the miners, and that even if it were, the only effect would be to put out the safety lamps. The sheriff substitute decided in favour of the defender, stating that the chance of the gas being forced out at the same time that a naked light might be exposed was very remote, and that it was not reasonably practicable to remove the firedamp.

If this decision is a proper interpretation of General Rule 1, it means that workmen may be allowed to work in close proximity to large accumulations of firedamp provided they have safety lamps and the gas is not actually in a working place or travelling road. I do not think that this limited application of the rule was intended when the Act was passed, and as I cannot take the responsibility of accepting this interpretation, I have, with your consent, appealed to the Higher Court.

Examination for Managers' Certificates.

As usual, the annual examination of candidates for managers' and under managers' certificates of competency was held in Glasgow on 23rd and 24th of November. The examiners are:—

John Greig, Milnathort, Kinross-shire.
Robert Frew, mining engineer, Glasgow.
Robert T. Moore, B.Sc., mining engineer, Glasgow.

For first class certificates 55 candidates came forward, and 15 of these were successful in getting certificates, while for second class certificates there were 29 candidates, of whom 17 were successful.

Exemptions.

Only two exemptions from the requirements of the Coal Mines Regulation Act were granted by the Secretary of State during the year, viz.:—

Holytown Colliery.—Exemption for four months under section 18 (iii.) (*a*) from the provisions prohibiting single shafts while an outlet is being made.

Barr Colliery.—Exemption of the stony coal for three months under section 18 (ii.) (*b*) from the provisions prohibiting single shafts, on account of the workings having reached the extremity of the field.

Complaints.

Many complaints, anonymous and otherwise, have been received during the year, and the majority of these were in connexion with checkweighers' grievances and disputes regarding deductions for foreign material sent out of the mine along with the coal. I understand that in England disputes of this nature, and the frequent demand for the intervention of the Inspector of Mines in connexion therewith, are not nearly so common as in Scotland. The reason for this is apparent. In Scotland, as a rule, the owners do not recognise the miners' unions or permit the officials thereof to interfere with the arrangements they make with their workmen, while the union officials make efforts to be recognised by the owners as the agents of the miners. In many cases where a checkweigher is appointed it is through the agency of the union that this is done, and it has been often affirmed that the man chosen is a person who has previously taken an active part in stirring up the workmen against their employer, and who continues to do so after his appointment. The miners have a right to appoint whom they choose, and the owners and their officials are prohibited from interfering with his appointment in any way. But what is the result when a man of the kind referred to is appointed? The checkweigher, feeling secure in his position, can make himself obnoxious in many ways, and be the means of constantly stirring up ill-feeling, and in point of fact in many cases he acts as the paid agent of the workmen as well as the checkweigher. Now, a checkweigher is a person appointed by law to perform a certain duty, viz., to check the weighing of the mineral and the determining of the deductions, and from the nature of his position he must necessarily become acquainted with a great deal of information regarding the mine and the workmen outwith his own special duties. But where there unfortunately happens to be an antagonistic feeling between the employer and the employed, it appears that this man is at liberty to use the information thus obtained against the employer. It cannot but be very galling to a mine owner to have a man of this kind planted in the midst of his workmen, and it is not surprising to find so many instances of this bitter feeling to which I have referred.

It is right that the miners should have the power to appoint a checkweigher, and the owner who desires to deal fairly with his workmen need have no fear of one on his pithead, but the more I see of the working of the weighing clauses of the Coal Mines Act, the more I am convinced that as a matter of prudence and of justice the checkweigher should be rigidly restricted to the performance of the duties for which he was appointed, and should be prohibited from acting in any way as the agent of the workmen, and from divulging to others any man's output.

From one point of view such a restriction upon a man's actions may seem rather hard, but a checkweigher occupies a peculiar position, and I am certain that until such a restriction upon his actions is made imperative the disputes and bad feeling that are constantly arising regarding the weighing clauses will still continue unless the owners are prepared to let the checkweigher be recognised as the workmen's agent. It is right to mention, however, that at many collieries where checkweighers have acted for years no disputes for which they have been responsible in any way have arisen.

Some of the anonymous complaints have been found on investigation to have had no foundation. No workman having a just cause for complaint need fear to append his name and address to any letter sent by him, nor is there need for the common threat with which many complaints conclude, viz., that unless attended to at once the Secretary of State will be communiciated with.

Special Rules.

In consequence of numerous accidents caused by explosions of gunpowder through sparks from naked lights and tobacco pipes, by persons falling down the shaft from mid-workings, by drawing in front of hutches, and by spragging railway waggons with pit props, Mr. J. B. Atkinson and I drew up new Special Rules, which were proposed to the mine owners in the prescribed manner. We held a number of meetings with the representatives of the owners, and after several alterations were agreed to, the Rules were finally adopted, and became established in the month of May throughout Scotland. They are as follows:—

Additional Special Rules.

(1.) While charging shotholes or handling any explosive not contained in a securely closed case, or canister, a workman shall not smoke or permit a naked light to remain on his cap, or in such a position that it could ignite the explosive.

(2.) Where a mid-working of a vertical shaft is not provided with an appliance which constantly acts as a fence, the gate fencing the shaft at every such mid-working, being a mid-working in use for the regular passage of workers, or the drawing of minerals from the mine, shall be connected with an indicator in the engine-house, which shall indicate to the winding engine-man whether the gate is open or shut, and the engineman is prohibited from moving the cage from said mid-working until the indicator shows that the gate is closed. Should the indicator show at any time that the gate is open when the cage is not at said mid-working, the engineman shall at once call the attention of the bottomer to the fact by signalling *four*.

(3.) The bottomer at a mid-working in a vertical shaft, not provided with an appliance which constantly fences the shaft, being a mid-working in use for the regular passage of workers, or the drawing of minerals from the mine, shall not open the gate fencing the shaft until the cage is stopped at such mid-working, and he shall not signal the cage away until he has closed the gate, and shall not permit any other person to open the gate while he is on duty.

(4.) Pointed wooden sprags not exceeding three feet in length shall be provided for the spragging of railway waggon wheels where spragging is necessary, and the use of other timber for this purpose is prohibited, and if there are no such sprags where the use of such is necessary, shunters shall stop work and report at once the omission to the manager or under manager.

(5.) Any person taking a loaded hutch down an inclined road by hand shall go behind, except where after putting a derailed hutch on the road or removing an obstruction, he is unable to get behind, and he shall use sufficient snibbles or other means of controlling its motion on the way if required.

Addition to Code of Signals.

From Surface to Bottom.

Ring four times in rapid succession when a gate at a mid-working is open and cage not there.

Inspection Duties.

I have again been ably assisted throughout the year by Mr. Thomas H. Mottram and Mr. Andrew Pearson. Mr. Mottram made underground inspections on 220 days, was occupied 28 days inspecting above ground, while 43 days were taken up with office work and prosecutions. Mr. Pearson reports that during the year he made underground inspections on 231 days, surface inspections on 46 days, and was engaged with office work and prosecutions on 29 days. Personally I made underground inspections on 79 days, surface inspections on 144 days, was engaged with prosecutions and office work 37 days, while attendance at the Home Office took up 36 days, and visits to quarries 4 days.

All accidents reported and complaints made have as usual been investigated, and, notwithstanding the long continued strike, all the mines producing mineral, with the exception of eight small ones, have been visited below ground at least once. Much more of my time than is usual has been occupied with checkweighers' complaints and prosecutions, together with attendance at the Home Office and the duties of secretary inspector for the year.

Mines worked under the Metalliferous Mines Regulation Act.

The following tables give the number of persons employed in and about these mines, and the quantity and kind of minerals raised therefrom :—

Persons employed.

Year.	Underground.			Above Ground.			Total above and below Ground.
	Males.			Males.			
	Ages 13 to 16.	Ages above 16.	Total.	Ages 13 to 18.	Ages above 18.	Total.	
1894	2	179	181	28	105	133	314
1893	2	158	160	25	103	128	288

Tons of Minerals raised.

Year.	Ganister.	Lead Ore.	Zinc Ore.	Hone.	Building Stone.	Limestone.	Total.
1894 - - -	—	2,152	160	345	13,980	2,483	19,120
1893 - - -	286	1,870	140	336	5,500	3,252	11,384

No accidents were reported to have taken place at any of the mines during the year.

I have, &c.

J. M. RONALDSON.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

Coal Mines Regulation Act.

List of the Fatal Accidents, and Deaths arising therefrom, within one year and a day from the date of the Accident, during the Year 1894.

Date and Hour of the Accident.	Hour of the Person's Shift, i.e., number of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
					AYRSHIRE.								
Jan. 17 8.30 a.m.	3rd	Auchenharvie, No. 5.	Stevenston -	Glengarnock Iron and Steel Co.	Samuel Beattie -	40	Brusher -	Fall of roof at brushing face -	–	1	–	–	–
Jan. 23 10.0 a.m.	4th	Portland, No. 4 -	Kilmarnock -	Portland Colliery Co. -	Wm. Miller -	49	Miner -	Fall of coal - -	–	1	–	–	–
Mar. 23. .30 p.m.	7th	Ayr-Sundrum, No. 3.	Ayr - -	George Taylor & Co. -	Peter O'Hara -	13	Ditto -	Explosion of firedamp - -	1	–	–	–	–
Apr. 17. 11.30a.m.	5th	Common, No. 11 -	Cumnock -	Wm. Baird & Co. -	Thos. McSherrie -	40	Ditto -	Fall of roof at working face -	–	1	–	–	–
Apr. 18 6.0 p.m.	5th	Portland, No. 5 -	Kilmarnock -	Portland Colliery Co. -	Jas. Higgins -	35	Ditto -	Explosion of firedamp - -	1	–	–	–	–
June 1 noon.	5th	Maxwood - -	Galston -	Wm. Baird & Co. -	Hugh Johnstone -	56	Waggon trimmer.	Crushed between two waggons -	–	–	–	–	1
July 23 7.30 a.m.	2nd	Blair, No. 9 -	Dalry - -	Ditto -	Jas. Murray, jun. -	16	Miner -	Fall of roof at working face -	–	1	–	–	–
July 24 8.30 a.m.	3rd	Kilgrammie -	Dailly - -	David Robertson - -	Wm. Davidson -	17	Ditto -	Run over by a loaded hutch on a "cuddie brae," through failure to put in hook of chain.	–	–	–	1	–
Aug. 2 8.0 a.m.	1st	Ashieburn - -	Muirkirk -	Wm. McKinlay - -	John Greenwood -	36	Ditto -	Fall of roof at working face -	–	1	–	–	–
Sept. 4 7.0 a.m.	1st	Lanemark, No. 2	New Cumnock	Lanemark Coal Co. -	Michael Gordon -	46	Haulage engineman.	Struck by a hutch falling down a hoist.	–	–	–	–	1
Oct. 8 10.0 am.	3rd	Corby Craigs, No. 4.	Dalmellington	Dalmellington Iron Co. -	Wm. Gordon -	55	Pony driver	Crushed between front hutch of "race" and roadside.	–	–	–	1	–
Oct. 15 4.0 p.m.	9th	Common, No. 10 -	Cumnock -	Wm. Baird & Co. -	John Blane -	40	Miner -	Explosion of firedamp by going into disused workings.	1	–	–	–	–

List of the Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, number of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
				AYRSHIRE—*continued.*									
Oct. 17 3.30 p.m.	9th	Glenbuck, Gala-whistle Pit.	Muirkirk	Cairntable Gas Coal Co.	Thos. Davidson, sen.	39	Miner	Fall of coal at stoops	–	1	–	–	–
Oct. 19 3.0 p.m.	9th	Maxwood, No. 1	Galston	Wm. Baird & Co.	Geo. Robertson	38	Ditto	Fall of roof on road	–	1	–	–	–
Oct. 27 6.30 a.m.	1st	Ditto	Ditto	Ditto	John Cuthbert	34	Roadsman	Fall of roof on road while repairing it	–	1	–	–	–
Oct. 27 8.0 a.m.	2nd	Common, No. 14	Cumnock	Ditto	Frank Harkness	34	Miner	Explosion of firedamp	1	–	–	–	–
Oct. 29 1.30 p.m.	8th	Kames	Muirkirk	Ditto	Hugh Murdoch	58	Drawer	Struck by a runaway hutch on an incline.	–	–	–	1	–
Nov. 5 8.45 a.m.	3rd	Lanemark, No. 2	New Cumnock	Lanemark Coal Co.	Charles Crate	54	Miner	Fall of roof at working face	–	1	–	–	–
Nov. 15 2.30 p.m.	9th	Ditto	Ditto	Ditto	Jas. McInulty	44	Ditto	Shock of electricity from electric cable.	–	–	–	1	–
Dec. 13. 6.30 a.m.	1st	Auchenharvie, No. 1.	Stevenston	Glengarnock Iron and Steel Co.	Edward Weir	48	Ditto	Fall of roof at working face	–	1	–	–	–
Dec. 18 7.15 p.m.	6th	Bank, No. 2	New Cumnock	New Bank Coal Co.	Wm. John Millwood	16	Pony driver & bottomer.	Pushed a full hutch into an open shaft at a mid-working and fell along with it to the bottom.	–	–	1	–	–
				DUMFRIESSHIRE.									
Feb. 16 2.0 p.m.	8th	Canonbie	Canonbie	Duke of Buccleuch	Wm. Dickson	16	Pony driver	While placing a hutch on the cage the cage was raised and the hutch fell back on him.	–	–	1	–	–
				LANARKSHIRE.									
Jan. 24 2.15 p.m.	1st	East Parkhead, No. 1.	Bellshill	Wilsons and Clyde Coal Co.	Jas. Liddell	19	Miner	Fell down the shaft from a mid-working.	–	–	1	–	–
Jan. 30 2.0 p.m.	8th	Bothwell Castle, No. 4.	Bothwell	Wm. Baird & Co.	Alex. Mackay	42	Sinker	Struck by a piece of wood falling down shaft.	–	–	1	–	–

List of the Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.	Hour of the Person's Shift, i.e., number of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No of Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
				LANARKSHIRE—*continued.*									
Feb. 6 10.0 a.m.	4th	Drumpeller, Nos. 3 and 4.	Coatbridge	Summerlee and Mossend Iron and Steel Co.	Lindsay Smith	21	Roadsman	Run over by a runaway hutch on a dook.	–	–	–	1	–
Feb. 12 4.30 a.m.	8th	Broomhouse	Mount Vernon	Haughhead Coal Co.	Jas. McAdams	60	Bottomer	While crossing the cage seat the cage came down on him.	–	–	1	–	–
Feb. 23 10.45a.m.	4th	Milnwood	Bellshill	Coltness Iron Co.	Bernard Lynch	44	Labourer	Run over by a locomotive	–	–	–	–	1
Apr. 5 8.20 a.m.	2nd	Craighead	Bothwell	Wm. Baird & Co.	Tobias McGlinchey	17	Waggon shifter.	Crushed betweeen two waggons	–	–	–	–	1
Apr. 13 6.30 p.m.	1st	Hamilton Palace, No. 1.	Ditto	Bent Colliery Co.	Samuel Warmington	23	Miner	Fall of roof at stoops while drawing props.	–	1	–	–	–
Apr. 13 5.15 p.m.	2nd	Westburn, No. 1	Cambuslang	Westburn Colliery Co.	George Whitter	18	Ditto	Fell down a blind pit	–	–	1	–	–
Apr. 16 1.0 p.m.	7th	Gilbertfield, No. 2.	Ditto	Cambuslang Coal Co.	John Mullen	35	Ditto	Fall of head coal while stooping	–	1	–	–	–
Apr. 27 noon.	6th	Gartsherrie, No. 8	Coatbridge	Jas. Nimmo & Co.	Wm. Bowman	41	Ditto	Fall of roof at working face	–	1	–	–	–
May 7 10.0 p.m.	4th	Burntbroom	Mount Vernon	Dunn Brothers	Edward Smith	55	Brusher	Fall of roof at road head	–	1	–	–	–
May 8 8.0 a.m.	2nd	Woodhall	Calderbank	Barr and Higgins	Alexr. Auld	44	Under manager.	Fall of roof in a lye	–	1	–	–	–
May 19 1.0 p.m.	8th	Tannochside, No. 1.	Uddingston	Calderbank Steel and Coal Co.	Thos. Carr	50	Labourer	Crushed between two railway waggons.	–	–	–	–	1
May 29 10.30p.m.	6th	Milnwood, No. 2	Bellshill	Coltness Iron Co.	Wm. Hamilton	40	Night overman.	Crushed by the cage while crossing the cage seat.	–	–	1	–	–
May. 30 8.30 p.m.	3rd	Govan, No. 6	Glasgow	Wm. Dixon (Limited)	Peter Reilly	62	Bottomer	Ditto	–	–	1	–	–
July 11 noon.	5th	Bardykes, No. 1	Cambuslang	Merry and Cuninghame	Wm. Bell	35	Shaftsman	Fell down shaft while passing into the cage from the top.	–	–	1	–	–
Sept. 19 12.45p.m.	6th	Bartonshill, No. 1	Baillieston	Wm. Baird & Co.	Samuel Fullerton	13	Stone picker	Crushed between a waggon and the screen.	–	–	–	–	1
Sept. 21 11.0 a.m.	6th	Mainhill, No. 2	Ditto	Ditto	Wm. Robertson	32	Fireman	Fall of roof at working face	–	1	–	–	–

List of the Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, number of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.
				LANARKSHIRE—*continued.*									
Oct. 15 1.15 p.m.	7th	Shields	Motherwell	Glasgow Iron and Steel Co.	John Forrest	36	Waggoner	Run over by a waggon while improperly "spragging" it.	–	–	–	–	1
Oct. 17 7.15 a.m.	1st	Ellismuir, No. 2	Baillieston	Ditto	Edward Thomas	32	Miner	Explosion of firedamp	1	–	–	–	–
Oct. 24 8.0 a.m.	2nd	Mainhill, No. 2	Ditto	Wm. Baird & Co.	Alexr. Robertson	27	Ditto	Fall of roof at working face	–	1	–	–	–
Nov. 17 11.0 a.m.	5th	Hallhill, No. 1	Ditto	Ditto	Jas. Reilly	30	Drawer	Struck by a runaway hutch on a dook.	–	–	–	1	–
Dec. 6 3.45 p.m.	10th	Wellshot, No. 1	Cambuslang	D. G. Dunn	George Canning	47	Manager	Winding-engine broke down, cage was carried over the pulley and fell on him.	–	–	–	–	1
Dec. 11 11.0 a.m.	4th	Broomhouse	Broomhouse	Haughhead Coal Co.	John McDonnachie	43	Miner	Fall of roof at working face	–	1	–	–	–
Dec. 21 3.45 p.m.	9th	Govan, No. 5	Glasgow	Wm. Dixon (Limited)	Neilie Anderson	17	Drawer	Ditto	–	1	–	–	–
				RENFREWSHIRE.									
June 7 9.30 p.m.	4th	Victoria	Nitshill	Wm. Baird & Co.	Jas. Dougan	50	Stoker	Fell off top of boiler	–	–	–	–	1
				STIRLINGSHIRE.									
Nov. 19	8th	Banknock, Gladstone Pit.	Bonnybridge	John Young & Co.	Edward Millar	46	Engineman	Caught by pumping engine connecting rod while attempting to pass below it.	–	–	–	–	1
									5	19	9	6	10

Reports of Assistant Inspectors.

4, Melrose Gardens, Glasgow, W.
12th February 1895.

Sir,

I have the honour to report, in accordance with section 20 of the Metalliferous Mines Act, 1872, that during last year I exercised the duties of an Inspector of Mines in the West Scotland District, under the direction of and as assistant to Mr. John M. Ronaldson, the Inspector in charge of the district.

I have, &c.

THOMAS HARRY MOTTRAM.

The Right Hon. Herbert H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Office, Whitehall.

Stonelaw Cottage, Rutherglen, Glasgow,
11th February 1895.

Sir,

I have the honour to report to you, in pursuance of section 20 of the Metalliferous Mines Regulation Act, 1872, that during the past year I exercised the duties of Inspector of Mines in the West Scotland District, and that in doing so I acted as assistant to and under the direction of Mr. J. M. Ronaldson, the Chief Inspector for that district.

I have, &c.

ANDREW PEARSON.

The Right Hon. Herbert H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Office, Whitehall.

REPORT

OF

J. L. HEDLEY, Esq., H.M. INSPECTOR OF MINES

FOR THE

NEWCASTLE DISTRICT (No. 3),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887, the Metalliferous Mines Regulation Acts, 1872 and 1875, and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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Mr. Hedley's Report.—Coal and Metalliferous Mines.

REPORT on the INSPECTION OF MINES in the NEWCASTLE DISTRICT, comprising the North part of the County of DURHAM, the Counties of CUMBERLAND and NORTHUMBERLAND, and so far as the Metalliferous Mines Regulation Acts apply, the detached part of NORTH LANCASHIRE, for the year ending 31st December 1894.—JOHN L. HEDLEY, Esq.

SIR, Newcastle-upon-Tyne, February 15, 1895.

IN compliance with section 43 of the Coal Mines Regulation Act, 1887, and section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to forward to you my Report as Inspector in charge of the Newcastle District, for the past year.

The total output for the year has been greater than for any previous year, and there has also been an increase in the number of persons employed, due, in the first instance, to the after effects of the stoppage of work in the Midlands, and subsequently to the prolonged strike in Scotland. At the same time it is gratifying to note that the number of accidents and deaths have decreased, with the result that the records for the past year are much more favourable than have ever been reported before.

The increase in the output arises entirely from the production of minerals under the Coal Mines Act, for whilst there has been an increase under that Act of 1,288,696 tons, the decrease under the Metalliferous Mines Act has been 74,565 tons, of which 72,026 consisted of hematite iron ore in Cumberland and Lancashire. In my last Report I was able to say that the output under this heading had increased for the first time for some years, but the downward course has again been reached, and the production is smaller than ever.

Barytes and lead ore also show the large decrease of 2,353 tons and 1,260 tons respectively, for these figures represent a loss of 30 per cent. and 31 per cent. in the production of these minerals in the Newcastle district.

Lead mining, as will therefore be seen, is still on the decline, and so far as can be foreseen there is very little prospect of any great improvement.

Two of the mines, however, which in past years produced a large quantity of ore and found employment for a considerable number of men have, after a brief stoppage, been re-started, and for the sake of all concerned it is to be hoped that the enterprise may be rewarded in a substantial form.

The production of zinc is apparently on the increase, but a fair proportion of the total amount is procured from old waste heaps which were formed many years ago, and at a time when blend was considered to be of no value.

Messrs. R. P. W. Oswald and G. F. Bell, the Assistant Inspectors of Mines, have rendered me valuable assistance during the year, the former in Cumberland and Lancashire, and the latter in North Durham and Northumberlend. In August you were pleased to appoint Mr. William Leck as an additional inspector for the hematite iron ore mines in Cumberland, a class of mining to which he had been specially trained, and he has since devoted the whole of his time to that particular work, and it is to be hoped with future good results.

In the prosecution of their work Mr. Oswald states that he made 142 underground inspections, and 135 above-ground inspections alone. Was engaged in office work and at police courts on 30 days, and attended 12 inquests.

Mr. Bell travelled 8,671 miles by rail and road, made 131 surface and 128 underground inspections, attended 35 inquests, and was engaged at meetings, in office work, &c., on 33 days.

During the five months since Mr. Leck was appointed he has made 139 visits to mines, of which 105 were underground as well as surface inspections, attended four inquests, and was occupied with office work on eight days.

With the exception of 10 days' holiday all my time has been occupied in the various duties which fall to the lot of an inspector in charge of a district. The clerical work is increasing year by year, with a consequent diminution in the amount of time that can be devoted to underground inspections, but nevertheless I was able to make over 100 such inspections.

COAL MINES REGULATION ACT.

Persons employed.

There has been an increase of 2,883 in the total number of persons employed in and about mines, inclusive of those on private branch railways and of those engaged in washing and coking coal; 2,401 of the number being employed underground, and 482 on the surface. Of the above total Cumberland is responsible for 436, North Durham for 968, and Northumberland for 1,479.

TABLE showing the NUMBER of PERSONS EMPLOYED in and about MINES as compared with the previous Ten Years.

County and Year.	Underground. Male Persons. Ages 12 to 16.	Underground. Male Persons. Ages above 16.	Underground. Male Persons. Total.	Above Ground. Ages 12 to 13. Boys.	Above Ground. Ages 12 to 13. Girls.	Above Ground. Ages 13 to 16. Boys.	Above Ground. Ages 13 to 16. Girls.	Above Ground. Above 16. Females	Above Ground. Above 16. Males.	Above Ground. Total.	Total Underground and above Ground.
Cumberland -	239	5,982	6,221	—	—	168	—	277	1,616	2,061	8,282
North Durham -	1,930	20,999	22,929	7	—	759	—	16	5,622	6,404	29,383
Northumberland -	2,345	25,231	27,576	2	—	709	—	16	5,395	6,122	38,698
Totals for 1894	4,524	52,212	56,726	9	—	1,636	—	309	12,633	14,587	71,313
„ 1893	4,383	49,942	54,325	42	—	1,533	—	281	10,298	12,154	66,479
„ 1892	4,531	49,866	54,397	4	—	1,513	8	284	10,305	12,114	66,511
„ 1891	4,590	48,550	53,140	1	—	1,573	1	254	10,065	11,894	65,034
„ 1890	4,333	45,631	49,964	8	—	1,443	4	246	9,720	11,421	61,385
„ 1889	4,081	42,038	46,119	25	—	1,355	6	263	9,009	10,658	56,777
„ 1888	3,905	39,689	43,594	35	—	1,240	—	309	8,728	10,312	53,906
„ 1887	3,818	38,759	42,577	10	—	1,111	1	396	8,962	10,480	53,057
„ 1886	3,536	38,646	42,182	25	—	1,074	—	395	8,872	10,366	52,548
„ 1885	3,812	38,669	42,481	25	—	1,107	4	408	8,986	10,530	53,011
„ 1884	3,778	38,230	42,008	35	1	1,116	9	409	8,728	10,298	52,306

Persons employed on private branch railways and tramways, and in washing and coking coal, are included in the above table for the past year, and in comparing the numbers with previous years it should be borne in mind that about 2,000 people are so engaged. The actual number for the past year was 2,033 or an increase of 82 over that for 1893.

Mineral raised.

An increase of 1,288,696 tons on the output for 1893 was the result of the year's working. This amounts to over 6 per cent., and was caused entirely by the extra production of coal, due, first to the cessation of work in the Midlands, and, secondly, to the great Scotch strike. Cumberland contributed 239,303 tons, North Durham 608,127 tons, and Northumberland 441,266 tons of the total increase.

The accompanying table gives the quantities of the different minerals for each county for the year, and for comparison, the total quantities for the district for the last 11 years.

TABLE showing the QUANTITY of MINERAL raised as compared with the Ten preceding Years.

County and Year.	Coal.	Fireclay.	Oilshale.	Ironstone.	Sandstone.	Ganister.	Limestone.	Totals.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Cumberland -	2,058,867	38,137	—	—	*200	1,820	—	2,099,024
North Durham -	9,622,703	129,190	—	—	—	—	—	9,751,893
Northumberland -	9,541,199	144,674	—	—	—	—	705	9,686,578
Totals 1894 -	21,222,769	312,001	—	—	200	1,820	705	21,537,495
„ 1893 -	19,924,708	318,571	2,593	—	*200	2,037	690	20,248,799
„ 1892 -	17,828,351	295,938	1,981	—	—	2,079	836	18,129,185
„ 1891 -	19,338,455	356,450	4,026	—	—	2,761	2,595	19,704,287
„ 1890 -	19,253,280	364,587	7,698	—	2,295	2,414	836	19,631,110
„ 1889 -	18,861,335	344,741	—	571	—	4,559	848	19,212,054
„ 1888 -	17,915,571	302,213	—	761	—	3,092	766	18,222,403
„ 1887 -	15,310,026	236,411	3,669	1,037	—	5,053	203	15,556,399
„ 1886 -	16,462,491	265,643	—	1,067	—	2,015	1,176	16,732,392
„ 1885 -	16,427,529	320,939	—	773	†771	2,525	1,790	16,754,327
„ 1884 -	16,841,841	362,281	—	884	—	1,610	1,444	17,208,060

* Pyrites. † Copperas lumps.

Accidents.

The total number of accidents reported during the year was 384, resulting in the loss of 78 lives and injuries to 320 persons, there being, as compared with the year 1893, an increase of one in the number of accidents, a decrease of eight in that of lives lost, and an increase of eight in the number who were injured. Of the fatal accidents, one from a fall of roof resulted in the death of two men, and the remaining 76 were responsible for an equal number of deaths. One death resulted from an explosion of fire-damp; 37 from falls of roof and sides; 4 in shafts; 23 miscellaneous, underground; and 13, of which number two were on branch railways, or in washing and coking coal, occurred on the surface. One death was due to injuries received in the previous year, and four others were caused by accidents of so trivial a nature, such as a finger cut by a piece of cannel, a bruised arm, &c., that the sufferers were not at the time incapacitated from continuing their work. Accidents of this latter nature are of frequent occurrence in mines, and it is impossible to prevent them, and it is only fair, therefore, to bear this in mind when the number of mining fatalities are under discussion.

The following tables show how the accidents have been distributed over the different portions of the district for the past four years:—

County.	Number of separate Accidents.				Number killed.				Number injured.			
	1894.	1893.	1892.	1891.	1894.	1893.	1892.	1891.	1894.	1893.	1892.	1891.
Cumberland -	85	84	75	106	15	11	6	13	72	73	71	98
North Durham -	138	125	103	131	28	35	22	30	112	96	84	109
Northumberland -	161	176	149	190	35	40	45	34	136	143	113	164
Totals - -	384	385	327	427	78	86	73	77	320	312	268	371

The table does not show the relative death-rate for the three counties for each of the four years, but is given for the purpose of enabling a comparison to be made of the accidents in each county from year to year. It will be seen that the number of fatalities in Cumberland were excessive as compared with previous years, though there was nothing special in the nature of the accidents, which were all due to ordinary causes.

The following table shows the months in which the accidents occurred during the past year, and for the purpose of comparison, for the previous three years:—

Month.	Number of separate Accidents.				Number of Deaths.				Number injured.			
	1894.	1893.	1892.	1891.	1894.	1893.	1892.	1891.	1894.	1893.	1892.	1891.
Injured in 1893 -	1	7	—	—	1	7	—	—	—	—	—	—
January - -	46	25	37	—	16	3	12	8	31	23	27	—
February - -	24	25	28	—	5	1	9	6	19	24	19	—
March - -	18	31	19	—	4	9	4	1	15	22	15	—
April - - -	31	21	17	—	3	2	6	8	31	19	11	—
May - -	25	41	17	—	4	10	4	5	24	37	14	—
June - - -	29	29	21	—	7	7	2	5	23	22	20	—
July - -	42	33	26	—	8	11	6	4	34	23	20	—
August - -	34	32	32	—	4	4	7	7	31	29	27	—
September -	30	28	33	—	4	9	7	5	26	20	28	—
October - -	40	45	37	—	9	8	7	9	31	39	31	—
November - -	28	34	22	—	7	8	1	13	22	26	21	—
December - -	36	34	38	—	6	7	8	6	33	28	35	—
Totals -	384	385	327	—	78	86	73	77	320	312	268	—

With a smaller number of accidents and an increase in the number of those employed and in the output of minerals, it will be interesting to note how the ratios for the year compare with those in the past, and from a perusal of the accompanying table, it will be seen that there has been a considerable increase both in the quantity of mineral raised and in the number of persons employed per accident and per life lost.

TABLE showing the RATIOS of FATAL ACCIDENTS and DEATHS to the number of PERSONS EMPLOYED and the TONS of MINERAL WROUGHT per Accident and Death in 1894 and 1893, and the DECENNIAL AVERAGES from 1864 to 1892 inclusive.

County.	Mineral raised.	Persons employed.	Separate Fatal Accidents.	Lives lost by the Accidents.	Tons of Mineral wrought per Fatal Accident.	Tons of Mineral wrought per Life lost.	Persons employed per Fatal Accident.	Persons employed per Life lost.
	Tons.				Tons.	Tons.		
Cumberland -	2,099,024	8,282	15	15	139,935	139,935	552	552
North Durham -	9,751,893	29,333	27	28	361,181	348,282	1,086	1,048
Northumberland -	9,686,578	33,698	35	35	276,759	276,759	963	963
Totals and averages 1894	21,537,495	71,313	77	78	279,708	276,122	926	914
Totals and averages 1893	20,248,799	66,479	85	86	238,221	235,358	782	773
Averages, 1883 to 1892	17,857,053	56,431	65·9	76·3	270,972	234,037	856	740
" " 1873 to 1882	14,575,508	47,839	—	68·1	---	214,031	—	702
" " 1864 to 1872	11,492,800	30,492	—	80·5	—	142,669	—	378

As showing the results in another form, in order to make a comparison easy with those for other districts (*see* Summaries of the statistical portion of the Reports of Her Majesty's Inspectors of Mines), the following Table is given.

TABLE showing the DEATH-RATE per 1,000 PERSONS employed, and per 1,000,000 TONS of MINERALS raised in 1894 and 1893, and the DECENNIAL AVERAGES from 1864 to 1892 inclusive.

—	Mineral raised.	Persons employed.	Separate Fatal Accidents.	Lives lost by the Accidents.	Death-rate per 1,000 Persons employed.	Death-rate per 1,000,000 Tons of Mineral raised.
	Tons.					
Cumberland - - -	2,099,024	8,282	15	15	1·81	7·15
North Durham - -	9,751,893	29,333	27	28	·95	2·87
Northumberland - -	9,686,578	33,698	35	35	1·04	3·61
Totals 1894 - -	21,537,495	71,313	77	78	1·09	3·62
" 1893 - - -	20,248,799	66,479	85	86	1·29	4·25
Averages 1883 to 1892 -	17,857,053	56,431	65·9	76·3	1·35	4·27
" 1873 to 1882 -	14,575,508	47,839	—	68·1	1·42	4·67
" 1864 to 1872 -	11,492,800	30,492	—	80·5	2·64	7·00

In addition to giving the percentages of the accidents under the different headings to the total number, I also give, as usual, in the following table a short analysis of the fatalities from fall of roof and sides. This information can, of course, be had by wading through the list of accidents, but it is more desirable to bring it under notice in a condensed form, particularly as by so doing attention is drawn more directly to the class to whom the accidents have happened, and makes it easier, therefore, to devise means to prevent similar occurrences. It is evident from the figures for the past year that extra precaution is required amongst those employed on roadways; and it is to be hoped by drawing attention to the fact that both the officials and those employed on roadways may be induced by the exercise of greater care to endeavour to reduce the mortality to, at any rate, as favourable a state as it has been in past years.

TABLE showing NUMBER of ACCIDENTS under the different HEADINGS, and PERCENTAGES of TOTAL, together with ANALYSIS of ACCIDENTS from FALLS of ROOF AND SIDE from 1883 to 1894 inclusive.

Year.	Explosion of Fire-damp.	Percentage of Deaths.	Falls of Roof at Face.	Falls of Side at Face.	Falls of Roof in Goaf.	Falls of Roof and Sides on Road-way.	Total Falls of Roof and Sides.	Percentage of Deaths.	In Shafts.	Percentage of Deaths.	Miscellaneous; Underground.	Percentage of Deaths.	Miscellaneous on Surface.	Percentage of Deaths.	Total Deaths.
1883 -	2	2·78	15	3	6	8	32	44·44	7	9·72	20	27·78	11	15·28	72
1884 -	—	—	18	4	5	8	35	53·03	6	9·29	18	27·27	7	10·61	66
1885 -	42	46·15	11	1	2	7	21	23·08	9	9·89	13	14·29	6	6·59	91
1886 -	—	—	15	5	3	7	30	53·57	5	8·93	14	25·00	7	12·50	56
1887 -	12	17·39	11	5	4	9	29	42·03	6	8·70	19	27·53	3	4·35	69
1888 -	31	33·70	10	4	4	11	29	31·52	5	4·43	18	19·57	9	9·78	92
1889 -	7	9·33	13	8	8	6	35	46·67	3	4·00	16	21·33	14	18·67	75
1890 -	—	—	13	7	4	6	30	32·61	9	9·78	39	42·39	14	15·22	92
1891 -	6	7·79	14	4	3	11	32	41·56	4	5·20	27	35·06	8	10·39	77
1892 -	2	2·74	22	4	3	8	37	49·32	3	4·11	28	41·09	3	2·74	73
1893 -	2	2·32	20	7	4	16	47	54·65	10	11·63	22	25·58	5	5·81	86
1894 -	1	1·28	12	4	3	18	37	47·43	4	5·13	23	29·49	13	16·67	78

Explosions of Fire-damp.

Twelve separate accidents, resulting in the loss of one life and injuries, principally not of a serious nature, to 12 persons, were reported to me during the year; and it will be seen from the accompanying list that they were without exception caused by the use of open lights, and in some cases conduced to by the recklessness of the sufferers themselves, or by the neglect of those whose duty it was to look after the safety of their fellows.

The fatal explosion, No. 52 on the list of fatal accidents, occurred at the Newburgh Colliery, near Acklington, on the 10th September. This colliery has been recently opened out, and the workings in the Queen coal seam where the accident happened, are consequently limited in extent. Naked lights were in use, as no danger was anticipated from fire-damp, the seam having been worked in the district for many years with open lights, and without accidents.

On the morning in question, the deputy, William Usher, made his examination of the workings, and found gas in a certain working place, but failed to put up a fence across the entrance. He states that he was called away on some important business, and although he saw the hewer, Andrew Oliver, and sent him to work in some other place, he forgot to warn the deceased, who proceeded direct to the place, and entered it for the purpose of seeing if there was a loaded tub ready for him to bring out, when the gas fired at his naked light, and he was so severely burnt that he died four days afterwards.

It was true that the deputy was called away in consequence of some trouble with the putter lads, but that was no excuse for neglecting his duties of examining the working places; and had it been absolutely necessary for him to leave the workings, he ought to have taken such steps as would have prevented the entry of the men until his examination had been completed. Be that as it may, however, it was admitted that although the gas was found, no fence or danger board had been put up, as is required by Special Rule 43, for which offence proceedings were taken against him at Alnwick Police Court, with the result that he was fined 1*s.* and costs 10*s.*

Nos. 3 and 8 on the list of explosions are illustrations of the gross negligence and carelessness shown by some officials in mines where fire-damp is but rarely seen, and at long intervals; in the first instance, very nearly resulting in the loss of life of, and in the other causing personal injury to, the man who was appointed for the purpose of making the inspections. It is almost inconceivable that, as in the first case, a man knowing that the lives of his fellow workmen depends upon a proper discharge of his duties, should, even in a pit which is comparatively free from fire-damp, be so indifferent to his responsibilities as to allow them to enter a place before it has been properly examined, more especially where naked lights are in use. But what can be said of an official who, although provided with a safety lamp for the purpose, deliberately walks into a place with an open light to search for gas. How can the workmen have confidence in officials when such cases come to their knowledge, and how can it be expected to find proper discipline in a pit under such circumstances? It may be said that my remarks are not warranted in the case of every mine, and I am not only willing but glad to say that they are not; but on the other hand, when we find four, if not five, out of the twelve accidents under notice due to the default of officials, it is only fair to assume that the same thing goes on daily, and probably to the same extent all over the district.

It is quite possible that a certain amount of laxity may exist in a mine without the knowledge of the manager, and it is all the more important therefore that attention should be drawn to these cases.

LIST of EXPLOSIONS of GAS in the NEWCASTLE DISTRICT in the Year ending December 31, 1894.

Date.	No.	Name of Colliery.	Where situate	Name of Seam.	No. killed.	No. injured.	Barometer, reduced to Sea Level.	Cause.
Jan. 15th	1	Doctor	Bedlington	Low Main	—	1	29·98 Rising steadily.	A small quantity of gas had come off from a "trouble" and lodged in a hole in the roof at the place where the hewer kept his picks. For some reason he put his light into the hole, and ignited the gas, which burnt him slightly. The gas had been seen in this pit for a considerable time past. Cause, open lights.
„ 17th	2	Seghill	Seghill	Yard	—	1	29·35 Falling.	A shot had been fired in a top canch, and on the man returning to the place after an interval of about 15 minutes, a small quantity of gas lighted up at his candle. Cause, open lights.
April 23rd	3	West Wylam	Prudhoe	Six Quarter	—	2	29·85 Falling steadily	This accident was due to gross neglect on the part of the deputy in allowing the men to enter their working place before it had been examined. They were putting a road through a rise "trouble," and, owing to there being no brattice set, a quantity of gas had collected at the face, which was ignited by the hewer's candle as he and the putter were taking the tub in. The deputy's only excuse for not visiting the place was that it was wet, but as he had previously seen a trace of gas there, he should have doubled his precautions rather than relax them. He was taken before the magistrates and fined. Cause, open lights.
„ „	4	East Holywell	Backworth	Low Main	—	2	29·80 Falling steadily	They had fired a shot in a top cauch and on their return examined the place (so they said) with a safety lamp, but failed to detect any gas. Immediately after they were crawling over the fallen stones with candles in their hands, when there was a slight ignition of gas. It is certain that the examination with the lamp had never been made. Cause, open lights.
May 15th	5	Newburgh	Acklington	Queen	—	1	30·24 Rising steadily.	A shifter on going into a working place saw that a fall of roof had occurred, and was examining it with his candle when he lighted up a little gas which had accumulated in the hole. Cause, open lights.
June 10th	6	East Holywell	Backworth	Low Main	—	1	29·70 Rising after sharp fall.	Some gas issuing from a break had collected in a hole in the roof of one of the main rolley ways, and it was ignited by the candle of a man who went to take a tub away from the place, and who, in doing so, brushed the gas on to his candle, which was stuck on the side near the roof. Had the chargeman made a proper examination this accident would never have happened. Safety lamps are now used throughout this seam. Cause, open lights.
„ „	7	Cowpen (Mill)	Blyth	Low Main	—	1	29·59 Falling steadily	A stoneman was going to drill a hole in a top canch, and on putting his light near the roof a small quantity of gas, probably from a break caused by a previous shot, was lighted up. Safety lamps are now used in that district. Cause, open lights.
„ 16th	8	Tanfield Lea	Stanley	Hutton	—	1	30·00 Falling after steady rise.	The injured man, who was a deputy, went into a certain working place to examine it in the usual way with his safety lamp, when the latter went out. He then lighted a candle and continued his inspection until he found what he was looking for, with the result that he was rather severely burnt. Cause, open lights.
Sept. 10th	9	Newburgh	Acklington	Queen	1	—	30·53 Falling after rise.	The deceased, who was a putter, was allowed to go into a working place in the ordinary course of his duty, although the deputy had visited the place on his usual rounds and found gas present, when an explosion occurred at his candle. Cause, open lights.
Oct. 2nd	10	Shilbottle	Alnwick	Shilbottle	—	—	30·55 Steady fall.	A little gas lying in a hole in the roof lighted up at a candle, but no one was injured. Gas had never been seen in this seam before. Cause, open lights.
„ 16th	11	South Medomsley.	Dipton	Busty	—	1	30·35 Steady.	A hewer holed into some old workings of which the officials were not aware, when some gas came away and fired at the man's candle. Safety lamps are now used. Cause, open lights.
„ 24th	12	Bedlington (A)	Bedlington	Yard	—	1	29·02 Falling rapidly	The master shifter was going into a bord, which it was said had been recently examined, when a little gas was ignited by the candle of a man who was following him in, but, the master shifter said, unknown to him Cause, open lights.

Falls of Roof and Sides.

Of the 37 deaths resulting from 36 separate accidents, 16 occurred at the face of the workings, 3 in the goaf, and 18 on roadways. Of those at the face, several would have been prevented had timber been set in anticipation of the unforeseen dangers that must always exist during the operation of coal working, but unfortunately, both deputies and hewers alike trust too much to the appearance of the roof, and its apparent soundness as judged by "jowling," rather than to any systematic placing of props, and it points to the one conclusion that has been reiterated over and over again, that the manager should give more definite instructions on this point to the officials, and fix such a maximum distance for the setting of props as, from his experience of the nature of the roof he may consider necessary for the safety of the workmen.

The second class of accident, that from falls of roof in the goaf, is one that need very rarely happen if proper precautions are taken, although timber drawing is, to all appearance, a very dangerous operation. In nearly every case, however, that has come under my notice, it has transpired that the victim, though selected for his experience, has for some reason or other, generally over-confidence, neglected some simple precaution that would have ensured his safety. When there is no need for haste, it is difficult to understand why a man will risk his life, generally with the sole object of saving a little time, for a deputy's earnings are not dependent on the number of props he draws.

Falls of roof on roadways have been largely in excess of the average number, and are accounted for to a large extent by the timber being knocked out by passing tubs, and so allowing the roof to fall.

One accident on roadways resulted in the loss of two lives, but it was apparently one of a simple nature. The two men had been taking up bottom to make height, and as the road was well timbered when seen by an official a little time before the accident, it is surmised that the deceased must have interfered with the foundation of the props, as they were all knocked out by the fall.

In Shafts.

Of the four fatal accidents in shafts, one was due to a man falling into the shaft from the surface, one occurred to a master shifter at an inset, by his head being crushed against the gate by the descending cage whilst he was talking to the on-setter at the bottom, the third was caused by a broken rope, and in the last case a man fell from the rope when being drawn up the shaft.

The first-mentioned accident, which occurred at the Seaton Moor Colliery, Cumberland, on the 22nd February, resulted in the death of a boiler fireman (brother of the head banksman), who had no business on the pit bank, but it appears that he went there to assist the under-banksman. The fence consisted of two bars on either side of the shaft, and the lower one had to be removed every time the cage came up, and then replaced. At the inquest it transpired that this lower bar had been fastened up, and when the deceased was pushing an empty tub towards the cage, he pushed it into the open side of the pit instead of on to the cage, and fell down the shaft with it.

On the 23rd October a fatal accident occurred to William Graham, joiner at the Buckhill Colliery, Cumberland, under the following circumstances. He was engaged in the pumping shaft looking for a leakage in a column of water pipes, and had been slowly raised for a distance of about 14 fathoms, when the rope suddenly broke and he was precipitated to the bottom and instantly killed. There was no evidence to show that the cage in which the deceased was riding had met with any obstruction in the shaft, but an inspection of the rope showed that at the point of fracture it was corroded completely through, a fact not to be wondered at when the history of the rope was told at the inquest.

The rope was of steel wire, 1 inch in diameter, and had been in use for about five years. It was at first used for raising coals from the bottom to an "eye" 19 fathoms up the shaft, beyond which point the cage did not pass; but when, three years ago, coal-winding ceased, it was left hanging in the shaft, not only to enable the joiner to examine the pumps, but to raise the men in case of an accident at the other shaft. During these three years the rope had never been properly examined, nor had it been oiled or greased, although on the 16th March the whole of the rope was on the drum. On that occasion the engineer, who had been in charge of the machinery for 10 months, examined the rope for broken wires as it was lowered down the pit, but failed to detect any. Whether this rope was one which could be said to be in *actual use*, and which consequently should have been examined every 24 hours,

or not, it is certain that common prudence should have dictated to any manager or engineer the necessity, when men's lives depend upon a rope, of making periodical inspections, and, especially where a shaft is wet, of taking every care to protect it from injury. The general rules do not make provision for the daily examination of any rope which is not in actual use, and, unfortunately, the special rule referring to such ropes provides only that they shall be examined from time to time, but as it is the duty of the managers to see that the proper appliances are used, he should take care that the persons responsible for making these examinations are duly instructed as to what intervals should be allowed to elapse between the inspections. This, however, had not been done in the case under notice.

It is only fair to state that tests were made in my presence with some of the wires taken from what I considered to be the worst part of the broken rope, with the result that its original estimated breaking strain of 17 tons was shown to have been reduced to one of 10 tons, and further, that as far as I could ascertain, the excessive corrosion was confined to the point of fracture, which, as the rope usually hung in the shaft, would be in the open air, about 7 feet below the pulley.

At Wallsend Colliery, on the 29th October last, there occurred an accident of a peculiar nature, which unfortunately ended in the death of a sinker, named Thomas Hamer. This well-known colliery is being re-opened by the Wallsend and Hebburn Coal Company, Ld., and as it is intended to work the place on a large scale, extensive alterations and additions are being made to the plant and machinery now on the ground, and it need hardly be said that some of the arrangements were naturally of a tentative character, as is always the case where a colliery is being re-opened. Sinking operations were in progress, and on the date named the G Pit was down to a depth of 121 fathoms, or 9 fathoms below the High Main seam, the second or H Pit being 107 fathoms deep, or 5 fathoms short of that seam. In the High Main seam a drift was driven from the G Pit and a communication made with the bottom of the H Pit by a borehole, in order to drain off the small feeders of water met with in the latter. Four 21 inch pumps, set at the same level, are employed to lift the water from the G Pit to a point 58 fathoms up, where it flows through another drift to the H Pit, and is then raised to the delivery drift at the surface by what may be termed the permanent pumping engines, of which there are two, each furnished with a 26 inch pump, and worked alternately. Hence it will be seen that if the pumping engines at the G Pit were stopped the water would gradually rise through the borehole in the H Pit. At this time the two permanent pumping engines, the winding engines, electric light engine, and the two crab engines were, for reasons mentioned above, dependent on one range of boilers and one main steam pipe, the G Pit pumping engines being supplied from the same boilers by an independent steam pipe; consequently, in case of mishap to the former pipe, all the first mentioned engines would be rendered useless, and inasmuch as the G Pit pumping engine was only used to lift the water from the bottom to the H Pit engine, it would, of course, have to be stopped.

This unfortunately did occur, through an accident to the receiver, resulting in the fracture of the pipe conveying the steam from the main supply pipe, and at a time when eight sinkers were engaged in the H Pit. All the electric lights, including those in the sinking pit, were at once put out, but the sinkers were at the time in no way alarmed. Immediate steps were taken by those at bank to get the men out of the pit, and as it was difficult to communicate instructions to them, the assistant master sinker, James Fawcett, was lowered by means of the brake down to the girders on which the pumps rested, whence he was able to lower some lamps to the men, and also to converse with them. The kibble was then lowered to the bottom, and after the men got in an attempt was made to prise the winding drum round, but without success. In the meantime the jinny or horse-crab rope was prepared, and this was then lowered into the pit and Fawcett gave the men instructions to attach two loops which he had previously sent down in the kibble, and for four of them to get on. The water at this time was gradually rising in the pit, and there was evidently some difference of opinion amongst the men below as to the best course to pursue, for according to Fawcett's statement, contradictory orders were given first by one man and then by another, and it was not until three-quarters of an hour had elapsed from the time the rope first reached the men that they finally started from the bottom, all the men being raised at once, three sitting in the loops, two standing, one in either loop, and the remaining three standing in spun yarn loops tied on to the rope above. Deceased was one of the centre group, and was apparently all right until they had been raised about half the distance to the girders, when he asked the next man to give him a hand until he got a better hold. This was done, but immediately after he fell away into the water and was drowned. The deceased, it appears, had lost a thumb of one of his hands by a previous accident, and it was thought that this would interfere with his grasp, but the general opinion amongst the other men was that he fainted.

MISCELLANEOUS UNDERGROUND.

Explosions of Gunpowder, &c.

Thirty-one separate accidents are responsible for the loss of one life and injuries to 35 people, as compared with 32 accidents and injuries to 38 persons in 1893.

As usual with this class of accident, the majority, if not all of them, might have been prevented by the exercise of a little ordinary care, but unfortunately the men get so accustomed to handling explosives, especially gunpowder, that they forget there is any risk attaching to its use.

It is very desirable, therefore, that the attention of the users of explosives should be called to several practices which, while not essential to its efficiency, are, as a perusal of the accompanying list shows, productive of danger, with the view of preventing, if possible, a repetition in the future of similar accidents to those recorded.

1st. Where squibs are used. It is distinctly mentioned on the wrapper that in no case should the "touch" be interfered with, but unfortunately it is a common practice to nip off an inch or two from the end, with the result that not unfrequently the shot lighter has not time to get out of reach of the shot, and is consequently injured by the flame or the flying coals. When it is considered that the usual time for one of these squibs to run is only about three-quarters of a minute, it is difficult to imagine why a man should risk his life for the sake of saving a few seconds of time.

It has also been brought to my notice on several occasions that these squibs have hung fire, probably owing to their being damp, and it is necessary therefore that the full interval should be allowed to elapse before returning to the shot.

2nd. When using straws, it too often happens that a man in his anxiety to get his shot off quickly does not allow himself a sufficient length of "touch," with the same results as when squibs are used.

3rd. In cases where a deputy has to fire shots he should in every instance see the hole before it is charged, in order that he may satisfy himself that it is properly placed, not bored in the fast, and that the depth of the hole is proportionate to the depth of the kirving. It is, in my opinion, not fair to ask a man to fire a shot which may be overcharged or improperly stemmed, at the risk of injury to himself, and, on the other hand, it would certainly be an advantage where round coal is required, as the quantity of explosive to be used for each shot would be determined by a skilled workman on the amount of work it had to do, and not, as is too often the case at the present time, by a young hewer, whose only thought is to make sure of the coal coming down, whether it be small or large.

4th. It is the practice in some places to charge two holes at once, especially in canches, and not unfrequently the shots are lighted up together, with the result, in the latter case, that the shot lighter, under the erroneous impression that both shots have gone off, probably returns to the place too soon, and is injured by the explosion of the second shot (*see* Nos. 16, 20, and 27). It is seldom that any advantage is to be gained in coal or canch work by firing two shots together, and on the ground of safety such a practice ought to be strictly prohibited.

5th. In view of the more extended use of the higher explosives, and consequently of detonators, it is very desirable that stringent rules should be drawn up as to the care of the latter, and they should not be allowed in the hands of anyone who is not thoroughly competent and able to take care of them. A record should be kept of every detonator given out, and the shot lighter should be in a position to account for those entrusted to his care (*see* accidents Nos. 6, 18, and 19).

LIST OF EXPLOSIONS OF GUNPOWDER, &C. in the NEWCASTLE DISTRICT in the Year ending December 31, 1894.

Date.	No.	Name of Colliery.	Where situate.	No. killed.	No. injured.	Cause.
January 4th	1	Seaton Delaval	Seaton Delaval	—	1	A stoneman was endeavouring to force a gelignite cartridge and detonator into a hole too small for it, when it exploded, fortunately without doing him much injury.
" 6th	2	Bedlington "A."	Bedlington	—	1	The shot went off before he could get away from it, probably caused by too short a squib.
" 8th	3	Walbottle	Scotswood	—	1	Shot went off prematurely. The man apparently lighted the straw instead of the "touch."
" 15th	4	East Holywell	Backworth	—	1	The shot had apparently missed fire, and the hewer was returning to put in another squib, when it went off, and he was struck by a piece of coal, which broke his leg.
" 16th	5	Ashington	Morpeth	—	1	His straw accidentally caught fire at his candle, and dropped into the powder box, where there was a small quantity of loose powder.

Date.	No.	Name of Colliery.	Where situate.	No. killed.	No. injured.	Cause.
January 24th	6	St. Helens	Workington	—	1	The injured man, a blacksmith's striker, picked up a detonator in the engineer's shop, and held it over the flame of a lamp, when it exploded, cutting him severely on the abdomen and face.
February 20th	7	Garesfield	Lintz Green	—	1	Premature explosion of shot.
„ 26th	8	Ashington	Morpeth	—	1	Premature explosion of shot.
March 23rd	9	Dunston	Gateshead	—	2	The deputy was firing a shot, which had been bored into the solid and which was also overcharged. The front part of the hole was blown off, but the flame, due to the excess of powder, reached the deputy and hewer, who were about 7 yards away.
„ 31st	10	Ashington	Morpeth	—	1	Taking a shot out of his box, when the candle dropped in and exploded the powder.
April 11th	11	Do.	Do.	—	1	A candle dropped on the cartridge and exploded it.
„ 17th	12	Hartford	Hartford	—	1	It was stated that the hewer had charged the hole with 7 in. of powder, which blew out, and that he then put in 15 in. and lighted up the shot, which again blew out and caught him before he could get away. A case of pure recklessness.
„ 17th	13	Cowpen	Blyth	—	1	Shot went off before the man had time to get away.
May 8th	14	Pegswood	Morpeth	—	1	The man put one cartridge into the hole and then poured in some loose powder from another cartridge, and in doing so evidently spilled some on the bottom of the hole, which was ignited by the copper stemmer coming into contact with a piece of brass, and so causing a spark.
„ 10th	15	Isabella	Blyth	—	2	This happened in a shaft which was being sunk deeper from the Low Main seam to win another seam. Three shots (two gelignite and one gunpowder) were ready for firing, and all the men except the chargeman and two others were raised to the Low Main seam. The chargeman should then have warned the waiter-on at the Low Main seam that shots were going to be fired, but for some reason or other the powder shot was lighted up by one of the men before he had done so. Some confusion then took place as to the signals, and the engineman, who should have got his signals from the waiter-on at the Low Main seam, did not move the engine. The shots went off, injuring two of the men, but fortunately very slightly.
„ 30th	16	Urpeth "C."	Birtley	—	1	A deputy lighted a squib, but it failed to burn. After an interval of a quarter of an hour, he returned, nipped a piece off the end of the squib, lighted it, and retired, but, thinking it had again failed, turned to look at it, when it went off.
June 5th	17	Seaton Delaval	Seaton Delaval	—	1	The injured man had put two holes into a large block of stone and charged them with gelignite. He then lighted them together, contrary to rules. One went off, and, although warned by the chargeman, he returned to the other just as it exploded, and was very severely injured.
„ 22nd	18	Throckley	Scotswood	—	2	A shot had missed fire owing to the hole being damp, and the hewer was cutting it out, when a spark fell from his candle on to the powder, which he had exposed.
July 23rd	19	Beamish (Second)	Chester-le-Street	—	1	One of the drivers took down the pit a detonator, which he had found at home, and was picking the fulminate out with a pin when it exploded.
August 7th	20	Walbottle	Scotswood	—	1	One of the shifters (unknown) had carelessly left two detonators in a refuge place, and they were found by a boy, who gave them to the injured lad. He was playing with one of them with his lamp pricker when it exploded.
„ 10th	21	North Seaton	Newbiggin	—	1	A stoneman lighted up two shots, and, on returning after one had gone off, found that the squib of the second one was partly burnt through. He put a match to it, when the shot immediately exploded.
September 8th	[illegible]	West Cramlington	Cramlington	—	1	A hewer dropped a candle into his powder.
15th	23	Cowpen	Blyth	—	1	Struck by coals flying from a shot.
October 6th	24	Crosby	Maryport	—	1	Injury to a stoneman, who did not give himself time to get away from the shot.
„ 20th	25	Whitburn	South Shields	—	1	A deputy lighted the fuse of a shot, but it did not go off. He then went to fire a shot in another place, and, after the lapse of half-an-hour, returned to the missed shot, which he was examining when it exploded.
November 28th	26	Shilbottle	Alnwick	—	1	A shot had missed fire, and another hole was drilled 3 feet away and fired. No attempt was made to find the powder from the first shot, which was afterwards exploded by the hewer's candle falling into it as it lay amongst the coals.
December 13th	27	Cowpen	Blyth	—	3	A shot of compressed gunpowder was being forced into too small a hole, when it exploded. The lads were only 20 years of age, and probably did not realise the danger they were running.
„ 18th	28	High	Cramlington	—	1	The man had two holes charged, one in the top and the other in the bottom canch. He fired the first hole, and, on returning to light the second, it went off upon him, but he could not explain how it happened.
„ 26th	29	Hastings	Seaton Delaval	1	—	The deceased lighted up a gunpowder shot in a hole which had been drilled in the past, when it blew the stemming out, and he was so severely burnt, not having gone sufficiently far away, that he only lived a few days.
„ 27th	30	Church	Backworth	—	1	A candle fell from a prop on to a cartridge, which the hewer had improperly placed on the ground.
„ 28th	31	Barrington	Bedlington	—	1	A hewer was getting a shot from his box, when, by some means, two were exploded.
				1	35	

Suffocation by Gases.

One death was due to this cause, and was the result of disobedience on the part of the deceased, who worked at a small land sale pit near Otterburn, Northumberland. Five or six men only were employed at this Brownrigg Colliery, and the owner, Joseph Armstrong, himself worked down the pit. He and the deceased, Robert Young, had been engaged in driving a small air road towards another pit, but on the morning of the accident Armstrong found on entering the place that black-damp or stythe was present, and he accordingly gave the deceased some other work to do. The air road referred to, it should be stated, was about 9 feet up the shaft from the pit bottom, and on the opposite side to the mouthing, and to get to it one had to climb up from the top of the cage, so that it was impossible to enter it inadvertently. For some reason or other the people in the neighbourhood were under the impression that the death was due to suicide, as the deceased, it was stated, had been depressed for some time past in consequence of a slight accident he had received; but his fellow workmen informed me that he was in excellent spirits that morning. He was missed from his work, however, and on a search being made, his dead body was found in the air-way. It was of course impossible to say definitely how he came by his death, but from an inspection of the place, and taking into consideration all the surrounding circumstances, I am decidedly of opinion that the facts were opposed to the theory of suicide, to which cause the jury attributed his death. On what grounds they based their verdict I do not know, as the inquiry was closed before I had an opportunity of being present; but in the absence of anything more definite than gossip and surmise, for of direct evidence there was none, it certainly seems strange that any other verdict than an open one should have been returned.

By Trams and Tubs and on Inclines and Engine Planes.

As usual, the majority of these accidents were due to preventible causes, not only in the cases where boys where killed, but in those where men of mature age were victims. For instance, an under-manager of experience lost his life in a very simple manner. He was at the shaft bottom, and wishing to go from the kip on to the empty road, was stepping on to the tubs to pass over, when the boy in attendance there told him that the signal to go on had been given. In spite of the warning, and of the bad example he was setting to his subordinates, he persisted in crossing, and just as he got well on to the tubs the sett started, and he fell between two of the tubs and was so severely crushed that he survived for a few hours only. Several of the accidents were due to direct breach of the rules, and the only way to prevent this is to punish the offenders whenever they may be caught infringing regulations which have been framed for the protection of their lives and limbs.

By Machinery.

A promising young mining engineer lost his life from injuries received in the Urpeth Busty pit, near Birtley, on the 10th January. Mr. J. D. Wilson, the manager, was informed early in the morning that the endless rope haulage underground was not working satisfactorily, and he immediately descended the pit and proceeded to the engine-house to ascertain the cause. The rope was giving at the time, and learning that there was something wrong with the rim of the main driving sheave, he got over the fence and was feeling the rim of the wheel as it revolved, when his hand was caught by the rope, and in endeavouring to save himself he fell over the sheave, with his leg under the crank of the engine, which made two or three revolutions before it could be stopped. The injuries he received were of such a nature that he only survived until the 27th of the same month. Why the deceased, who was to my knowledge a particularly careful man, should have omitted the precaution of stopping the engine, which he most certainly would have done had anyone else been examining the sheave, is to my mind only to be explained by over zeal and his anxiety not to interfere with the work of the pit; but it is one more example of the old adage, "the more haste the worst speed," which, if borne in mind by those engaged in pit work, would certainly result in the saving of many broken limbs, if not of more valuable lives.

On Surface.

With three exceptions the fatal accidents on the surface were of simple nature, and do not require further description than will be found in the general list.

On January 17th a boy lost his life at the Ouston "E" Pit, Birtley, under unusual circumstances. He was engaged as a picker at the screens, and was sent, by the foreman on an errand. Not returning for some time a search was made for him, but without avail, until

it was suggested that in passing off the screens he might have fallen into one of the waggons through the hole leading the coal from the belt screen, and on emptying the waggons he was found at the bottom of one of them quite dead. How he got into the hole is not known, as he had no need to go near it, nor was he observed by any of the other screeners. He must have been stunned when he fell, as no cries were heard by any one. All such places are now fenced.

At the Earsdon Church Pit, Backworth Colliery, on the 30th March, a brakesman, named Thomas Veitch, lost his life through his over haste in attempting to take a man-hole door off a boiler, when there was still a certain amount of pressure in the boiler, with the result that he was so severely scalded that he died the following day.

The third case was due entirely to the recklessness of the deceased himself, who was engaged at a washing machine, which was supplied with coals from a hopper. The coals had stuck to the sides of this hopper, and were not running freely, when deceased and another young fellow, instead of using the rod provided for the purpose, jumped into the hopper, with the result that they were both carried down by the rush of coals. The second youth was fortunately got out alive, but the deceased, William Robinson, was beyond hope.

Fatalities reported but not classed as Colliery Accidents.

As usual there were a number of accidents and deaths reported to me which cannot be classed as colliery accidents. A short description of each, with the name of the deceased and the locality, is appended hereto.

17th January.—A tramp was found dead on the coke ovens in connexion with the Blaydon Main Colliery, near Blaydon-on-Tyne. He had evidently gone there for warmth.

18th March.—A hewer, named George Turnbull, aged 41, died after 9½ years illness, the result of an injury to his spine from a fall of roof.

20th March.—A putter, named George Fawcus, 23 years old, was suddenly taken ill while at work in the Hebburn Colliery, and died the following day from peritonitis, as disclosed by the post mortem examination.

23rd April.—James Crone, carpenter, 56 years of age, was engaged on some work at the quay belonging to the Wearmouth Coal Company, Limited, when he fell into a boat below containing tools, &c., and fractured his skull.

28th May.—A boy died in the Newcastle Infirmary from injuries said to have been received at the Heworth Colliery, Gatehead, more than two years ago, from the kick of a horse.

30th May.—At the Wellington Pit, Whitehaven, a number of boys and girls were gathering coal from the refuse heaps, when a lad who was waiting to go down the pit threw a piece of wood from the pit top for them to scramble for; he then threw another piece, which unfortunately struck a boy named J. H. Robinson, aged 14, on the head, causing such injuries that he died on the 5th June.

2nd June.—At Choppington Colliery, near Morpeth, the foreman enginewright, Ralph Adams, 61 years of age, was crossing the pit yard, when he suddenly fell dead, the result of heart disease.

10th August.—J. Hall, enginewright at the Air and Mary pits, Beamish Colliery, was superintending some work underground when he was seized with an apoplectic fit. He was immediately removed to the surface and taken home, but died within three hours of the attack.

18th August.—Michael Lyons, rolleywayman, 50 years of age, was injured by a fall of stone in the Wearmouth Colliery on the 12th June 1884, and has never worked since. Death supposed to be the result of the accident.

25th August.—A deputy, Joseph Waugh, employed at the Maude pit, Backworth Colliery, died from supposed injuries said to have been received in the pit, but the evidence was so unsatisfactory on the point that the jury returned an open verdict.

27th August.—A verdict of death from natural causes was returned by the jury in a case where an endeavour was made to attribute the death of a man named Thomas Fenwick, employed at the Hamsterley Colliery, Ebchester, to injuries received in the pit.

11th September.—Abraham Dale, 42, dock labourer, was killed whilst shipping coal from the Whitehaven Colliery, by a waggon leaving the rails and crushing him against the fence of the staging.

19th September.—Elliott Hall, who met with an accident in the Wearmouth Colliery on December 29th, 1892, died from the injuries then received, but as more than one year and a day had elapsed, it has not been included in the list of colliery accidents.

22nd September.—A mason, named Thomas Hedley, aged 54, died suddenly whilst at work in the Pegswood Colliery, near Morpeth.

27th September.—An engineman, named Joseph Liddle, 50 years of age, died in the Newcastle Infirmary from injuries received on the 26th instant at the Montagu brickworks, Scotswood. This accident was also reported to H.M. Inspector of Factories, in compliance with the provisions of the Factory Act.

20th October.—A man named —— Mack, whilst passing over a level crossing on the Pontop and Jarrow Railway, near to Kibblesworth Colliery, with his horse and cart, was knocked down by some waggons and so severely injured that he died shortly after his removal to the Newcastle Infirmary.

27th October.—Robert Roland, a miner, of Cambois Colliery, near Blyth, disappeared at night after leaving a public-house, and nothing more was heard of him until 26th November, when his body was found in the colliery reservoir.

29th October.—At Benwell Colliery, Newcastle-on-Tyne, Wheatley Pearson, 45, hewer, died suddenly at the pit bottom, on returning from his work, from heart disease.

2nd November.—In the case of John A. Smith, a putter, the jury returned a verdict that the lad died from erysipelas, the result of an injury to his ankle, but how, when, and where received there was not sufficient evidence to show. It was stated by the father that the boy was injured when working in the Harton Colliery, South Shields, but there was no evidence in support of the statement.

10th November.—John Terncut, 15, a lad working at Seaton Delaval Colliery, in the night shift, had stolen some gunpowder, and was taking it home with him in the early morning, the powder being in a piece of gas piping which he had thrust down his trouser leg to hide it from view, when a spark from the lamp hanging on his belt fell into the open end of the pipe and exploded the powder, causing injuries to which he succumbed about three weeks after.

17th November.—John Bell, 65, blacksmith, died suddenly from apoplexy in the smith's shop at the Ashington Colliery, near Morpeth.

27th November.—A man named Mark Turner, 26 years of age, was picking coal from a waste heap at Hebburn Colliery, and got on to a full waggon when in motion. By some means he fell off, and the wheel passed over his neck.

28th November.—James Nesbitt, a labourer employed at the brickworks belonging to the Flimby Colliey, near Maryport, was killed by being run over by a railway waggon.

31st December.—Richard Fenwick, a man employed at the Watergate Pit, Maryport, died from cancer of the liver. He had been off work for some weeks through illness, but started again on the 22nd October. After a few hours he complained of feeling unwell, and left the pit, subsequently complaining that he had injured himself on the road out by falling over a rail, but his mate who was with him saw nothing of the accident.

PROSECUTIONS.

Owners, Agents, or Managers.

Acting under your instructions, a prosecution was instituted by me against Mr. Andrew Johnston, the agent, and Mr. William Donaldson, the manager of the Moorside Colliery, Arlecdon, Cumberland, for a breach of Special Rule 55, which provides that a report of the result of the examination made by the deputy appointed for the purpose of making the inspection before commencement of the shift, as required by General Rule 4, shall be recorded in the book kept for the purpose. On the 31st August the colliery was visited by Mr. Oswald, assistant inspector, who, upon an examination of the report book, found that no entry had been made either on that or the preceding day. An explanation was asked for by me, but not being satisfactory, I considered it my duty to report the matter to you.

The case was heard at the Whitehaven Police Court, on the 25th October, before J. R. Bain, Esq. (in the chair), W. M'Gowan, Esq., J. D. Watson, Esq., W. M'Cowan, Esq., and W. H. Watson, Esq., when Mr. Gordon Falcon appeared to prosecute, and Mr. T. Brown represented the defendants. Summonses were taken out for both the 30th and 31st August, but on the defendants pleading guilty, the second summons in each case was withdrawn.

The Bench fined the defendants 3*l.* (inclusive of costs) each.

Workmen.

Prosecutions for breaches of the Special Rules were notified to me in compliance with Section 66, Coal Mines Regulation Act, 1887, in the following cases, namely :—

January 5th.—Daniel Murphy, jun., and William Plummer were each fined 1*l.* 10*s.* including costs at the Maryport Petty Sessions for disobeying the orders of a deputy at the Watergate Pit, Flimby Colliery.

January 5th.—Joseph Davison, employed at the Choppington Colliery, near Morpeth, was fined 10*s.* and 9*s.* 6*d.* costs at Bedlington Police Court for being about the mine in a state of intoxication.

January 9.—Robert Straagheir, a putter employed at the Boldon Colliery, near Sunderland, was fined 2*s.* 6*d.* and 9*s.* 6*d.* costs, at the South Shields County Police Court for going into a part of the mine other than that to which he was sent to work by the overman.

January 11th.—Matthew Yarrow, putter was fined 1*s.* and 7*s.* costs at Lanchester Police Court for having matches in the Mary Pit, Beamish Colliery, near Chester le Street.

January 31st.—Robert Dotchin, a hand putter, for damaging a notice board at the bottom of the Ravensworth Shop Pit, Gateshead, had to pay the costs, 7*s.*, at Chester le Street Police Court.

February 8th.—William Armstrong, hewer, was fined 10*s.*, and costs 7*s.*, at the Lanchester Police Court for having his lamp within 2 feet of the swing of his pick, at the South Tanfield Colliery, Stanley.

February 13th.—Thomas Pickles, a putter employed at the Hebburn Colliery, was fined 5*s.* and 7*s.* costs at South Shields Petty Sessions for refusing to obey the orders of the banksman, and a further 5*s.* and 7*s.* costs for an assault on the same man.

March 7th.—John Rivett, employed at Pegswood Colliery, for striking a driver who refused to give him a ride out-bye, was fined 5*s.* and costs 17*s.* at Morpeth County Police Court.

April 5th.—Henry Pace, driver, South Tanfield Colliery, Stanley, was fined at the Lanchester Police Court 10*s.* and 19*s.* 6*d.* costs, for kicking a pony.

April 5th.—George Lilley, horsekeeper, South Tanfield Colliery, Stanley, was fined at the Lanchester Police Court 10*s.* and 9*s.* costs, for taking a lucifer match into the mine.

April 11th.—John Stevenson, at the Chester le Street Police Court, was fined 5*s.* and 15*s.* costs, for damaging his safety lamp at the Handen Hold Colliery, Chester le Street.

April 25th.—Thomas Moor, hewer, at the Ravensworth Betty Pit, Gateshead, was fined at the Chester le Street Petty Sessions 1*s.* and costs 7*s.*, for unscrewing the lock of his lamp with a piece of wire at the lamp station.

May 8th.—Joseph Rooney, driver at the Wearmouth Colliery, was fined 2*s.* 6*d.* and costs 9*s.* 6*d.* at Sunderland Police Court for riding between the full tubs on the engine plane sett.

May 15th.—Ralph Hall, deputy employed at West Wylam Colliery, Prudhoe, was fined 5*s.* and costs 15*s.* 9*d.* at Hexham Police Court for neglecting to examine a working place before the men commenced work, whereby two persons were severely injured by an explosion of fire-damp.

May 17th.—Daniel Cassidy, hewer, Beamish Colliery, Mary Pit, Chester le Street, was fined at Lanchester Police Court 1*l.* and costs 7*s.*, for striking his lamp with his pick.

June 13th.—James Dixon, Beamish Colliery, Mary Pit, Chester le Street, was fined at Lanchester Police Court 10*s.* and costs 9*s.*, for taking off side coal without permission.

July 5th.—Patrick Sweeny, hewer, Clara Vale Colliery, Wylam, was fined at Gateshead Police Court 10*s.* and 7*s.* costs, for obstructing the airway by putting his clothes into the ventilating tube.

July 18th.— William Wainwright, Handen Hold Colliery, Chester le Street, was fined 5*s.* and costs 3*l.* at Chester le Street for refusing to leave the cage when ordered to do so by the onsetter.

July 23rd.—Thomas Bell, sinker, Wallsend Colliery, was fined at the Tynemouth Police Court 2*l.* and costs 10*s.*, for attempting, when in a state of intoxication, to descend the pit, and for assaulting the chargeman who was on duty at the time.

August 21st.—Robert Smith, Thomas Snell, C. J. Burnett, J. W. Tonge, and Andrew Young, putters, were each fined at South Shields Petty Sessions 10*s.* and costs, for hewing coal off the side at the Whitburn Colliery.

September 10th.—James Blacklock, hewer, Hamsterley Colliery, Ebchester, was fined 10*s.* and costs 8*s.* at the Consett Police Court, for riding on a full sett contrary to rules.

September 15th.—William Usher, deputy, Newburgh Colliery, Acklington, was fined at Alnwick Police Court 1*s.* and costs 10*s.*, for not fencing a place in which he had found inflammable gas, the result being that a putter lad entered and was so severely burned that he subsequently succumbed to his injuries.

September 20th.—Robert Cutler, pony putter, South Tanfield Colliery, Stanley, was fined 10*s.* and costs 7*s.* 6*d.* at Lanchester Police Court, for riding on a pony below ground, and for a similar offence Henry Bennett, pony putter, was fined 5*s.* and costs 7*s.* 6*d.*

September 24th.—Henry Turner, hewer, Hamsterley Colliery, Ebchester, was fined 10*s.* and costs 15*s.* 6*d.* at the Consett Police Court, for riding on a full sett contrary to orders.

September 27th.—Alexander Goodwin, putter, Wearmouth Colliery, was fined 5*s.* and costs, at the Sunderland Police Court for allowing his pony to stray away from his control.

October 9th.—James Ford, putter, Wearmouth Colliery, was, at the Sunderland Police Court, fined 10*s.* and costs 8*s.* 6*d.* for riding on his pony on the engine plane.

November 15th.—George Potter, hewer, Beamish Colliery, Mary Pit, was fined 5*s.* and costs 7*s.* at Lanchester Police Court for having his safety lamp within 2 feet of the swing of his pick.

November 27th.—Hugh Convery, driver, and William Ritson, pump minder, Hebburn Colliery, were charged at the South Shields Police Court with improperly tampering with the former's lamp, when Convery was fined 10*s.* and costs 7*s.*, and the case against Ritson was dismissed.

At the same court William Trotter, pony putter, also of Hebburn Colliery, was fined 2*s.* 6*d.* and costs 7*s.* for riding on the engine sett without permission.

December 13th.—John McGee, gatewayman, Usworth Colliery, was fined at Gateshead 1*l.* and 8*s.* costs for throwing stones on the colliery premises.

Exemptions.

An exemption from "Provisions prohibiting single shafts while a shaft is being sunk or an outlet being made" (Coal Mines Regulations Acts 1887, section 18 (iii) (*a*), was granted by you on the 30th July, for a period of four months, to the Stella Coal Company, in the case of the Blaydon Main Colliery, Blaydon-on-Tyne. The second outlet has now been completed.

An exemption was also granted by me to Messrs. Jas. Joicey and Co., Limited, in respect of their Whitehall Colliery, West Pelton, from the provision of General Rule 27, requiring a sufficient cover to be used overhead, &c., until such time as the work of exploration had been completed. This is an old pit that has been opened out for the purpose of ascertaining whether the old Five Quarter and Brass Thill seam pillars are worth working.

Abandoned Mines.

During the year plans and sections have, in accordance with section 38, Coal Mine Regulation Act, 1887, and after comparison with the originals, been forwarded to you from the following collieries, namely:—

January 1st.—Chatton Colliery, Belford, Northumberland. A thin seam, name unknown. Coal exhausted.

January 6th.—Stiddle Hill Colliery, Woodburn, Northumberland. Thirty inch seam. Coal exhausted.

February 20th.—Deckham Hall Colliery, Gateshead, Durham. Plans of Five Quarter, Six Quarter, Bensham, and Yard seams. Not workable to a profit.

April 30th.—Whinnetly Colliery, Haydon Bridge, Northumberland. A thin seam, not named. Worked in connexion with and to supply lead mine, which is now closed.

May 7th.—Netherton Hall Colliery, Morpeth, Northumberland. Five Quarter Seam. Not profitable.

June 11th.—Herdley Bank Pit, Coanwood Colliery, Coanwood, Northumberland. Plans of Slag and Yard seams. Workings drowned out by stoppage of pumps at adjoining colliery. Coal almost exhausted.

June 16th.—Coxlodge Colliery, Gosforth, Northumberland. Five Quarter seam. Not profitable.

June —.—Dearham Colliery, Dearham, Cumberland. Plans of Ten Quarter, Rattler Band, Metal and Cannel Band, Yard, Little Main, and Fireclay seams. Not profitable.

July 17th.—Coanwood Colliery, Coanwood, Northumberland. Plans of Five Quarter, Yard, Coomb Roof and Slag seams. Coal practically exhausted.

August 17th.—South Medomsley Colliery, Dipton, Durham. Main Coal Seam. Coal exhausted.

October 26th.—Eagle Gill Colliery, Maryport, Cumberland. Plans of Upper Fireclay and Upper White Metal Seams. Coal exhausted.

GENERAL REMARKS.

In the early part of the year it came to my knowledge that in some of the pits the deputies who were appointed to make the examination of the working places, in accordance with General Rule 4, previous to the men commencing work, did not enter their reports in the books kept at the mine for that purpose until the completion of the shift, and consequently that the workmen on whose behalf the regulation was framed had no opportunity of seeing a

written report of the general state of the district until after the completion of the shift; and, with your permission, therefore, I issued a circular, of which the following was the text:—

"On several occasions recently my attention has been drawn to the fact that the report book, required by General Rule 4 to be kept at the mine for the purpose of recording the result of the inspection made by a competent person previous to the men commencing work, has not been filled up and signed until such competent person has left the pit.

"As there appears to be a doubt in the minds of some managers on this point, I wish to inform you that the report should be recorded and the book signed without delay, in order that the workpersons may have an opportunity of ascertaining for themselves not only the state of their respective working places, but of the mine generally, before proceeding to their work.

"It is not necessary that the report book should always be kept at 'bank,' or at the pit bottom, but if kept at the 'station,' it is requisite that a duplicate copy be sent to the surface for preservation and for the information of the management generally; or that the report book be sent to 'bank' during or at end of the shift.

"Trusting that you will give this matter, if the system is not already in force at your colliery, your early attention."

The necessity of having such reports duly signed is admitted on all hands, and where such a course has not been carried out in the past, either through error or inadvertence, the matter has been remedied without hesitation on the part of all concerned in the management.

The North Biddick Colliery, Washington, co. Durham, which until recently was worked by the representatives of the late Sir George Elliott, Bart., has now passed into the hands of the Earl of Durham, who works a large number of collieries in the South Durham District, and as it is desirable that all the mines belonging to the same owner should, if possible, be in one inspection district, the colliery in question has been transferred from this to the district under the charge of Mr. Thomas Bell.

Board of Examiners. Colliery Managers.

Two vacancies have occurred during the year, the first owing to the somewhat sudden death of Mr. T. H. M. Stratton, whom you were pleased to nominate as a member of the Board a few months only before his decease, and the second through the resignation of Mr. T. Taylor-Smith, one of the first members of the Board. Both gentlemen were representative mining engineers, and you have been pleased to appoint in their stead Mr. T. Edgar Jobling, Bebside and Choppington Collieries, Northumberland, and Mr. T. Heppell, Birtley Collieries, Durham.

The following is now the composition of the Board:—

John B. Simpson, Esq., Hedgefield House, Blaydon (Chairman) George Baker Forster, Esq., Corbridge T. W. Benson, Esq., Fourstones	Colliery owners.
A. S. Palmer, Esq., Low Fell, Gateshead T. Edgar Jobling, Esq., Blyth Thos. Heppell, Esq., Birtley	Mining engineers.
Mr. R. Elliott, Chester-le-Street Mr. A. Sharp, Maryport Mr. T. Weatherley, Pelton	Miners' representatives.
John L. Hedley, Esq., Newcastle-on-Tyne	H.M. Inspector of Mines.
M. Walton Brown, Esq., Neville Hall, Newcastle-on-Tyne.	Secretary.

No change has taken place in the examiners, who are:—

George May, Esq., Harton Colliery, South Shields.
John Simpson, Esq., Heworth Colliery, Gateshead.
J. G. Weeks, Esq., Bedlington Colliery, Bedlington.

The examination was held on the 4th and 5th January, when 16 candidates presented themselves in the first class, and of these 4 were disqualified for various reasons, 5 were successful, and 7 failed to satisfy the examiners. Of the 48 who sent in their names as candidates for second class certificates, 1 was absent, 18 passed, and 29 were unsuccessful.

It may be of interest to compare the numbers of those who have presented themselves for examination year by year, and as the information is not available to all, I append hereto a

table compiled by Mr. M. Walton Brown, the Secretary to the Board, giving the results of each examination held since the year 1875.

NEWCASTLE-UPON-TYNE MINING DISTRICT.

NUMBER of APPLICANTS for INFORMATION, and RESULTS of EXAMINATIONS since 1874.

Year.	Applications.	Present.		Passed.		Failed.	
		1st Class.	2nd Class.	1st Class.	2nd Class.	1st Class.	2nd Class.
1873*	—	—	—	—	—	—	—
1874*	—	—	—	—	—	—	—
1875	25	18	—	13	—	2	—
1876	33	18	—	13	—	5	—
1877	36	17	—	12	—	5	—
1878	33	16	—	6	—	10	—
1879	39	19	—	8	—	11	—
1880	25	17	—	6	—	11	—
1881	31	19	—	9	—	10	—
1882	25	15	—	11	—	4	—
1883	30	16	—	9	—	7	—
1884	30	13	—	5	—	8	—
1885	30	11	—	5	—	6	—
1886	20	11	—	6	—	5	—
1887	30	15	—	5	—	10	—
1888	89	10	66	5	39	5	27
1889	80	5	74	1	48	4	26
1890	75	7	67	4	37	3	30
1891	105	18	75	9	37	9	38
1892	73	3	46	1	28	2	18
1893	110	20	60	8	26	12	34
1894	109	12	47	5	18	7	29

* Information not available.

By permission of the Board I give the written questions put at the examination on the 4th and 5th January 1894.

FOR FIRST AND SECOND CLASS CERTIFICATES.

No. 1 Paper.

Time allowed—FIVE *hours*.

N.B.—The working out of all questions must be fully shown. No answer giving simply the result will be accepted.

I. Arithmetic :—

1. Add together—
   361·1264, 8·351, 10·0004, 136·28.
2. Subtract—
   5 cwts. 1 qr. 10 lbs. from 6 cwts. 9 lbs.
3. Multiply—
   $3\frac{3}{8}$ by $1\frac{81}{133}$.
4. Divide—
   10814220 by 876.
5. Reduce—
   2 miles 1 fur. 21 poles $2\frac{1}{2}$ yards to inches.
6. Three men take a bargain for the sum of 1,250*l.*, one to have $\frac{3}{10}$, the second $\frac{3}{15}$ of it; what is the value of the third's share?
7. Find the value of 6,420 articles, at 4*s.* $3\frac{1}{2}$*d.*
   and of 14,764 „ 1*l.* 17*s.* $8\frac{1}{2}$*d.*
8. A field, containing 19 acres 3 roods 34 perches, was divided into 34 allotments. What is the area of each allotment? Express the result, as a decimal of an acre, correct to five places.

II. Pumping :—
1. The feeders of water in a pit are 700 gallons per minute, the depth of shaft 100 fathoms. Assuming the engine to be fixed upon the surface, and to work 6 strokes per minute, how would you arrange the lifts, and what size would you make the pumps?
2. Sketch the different parts of a lifting and forcing sett of pumps. Give the name of each part, and explain how it acts.

III. Methods of working and ventilation :—
1. Sketch a district of bord and pillar workings, with the broken following up the whole workings, so that you could employ 25 hewers in each shift, and have equal quantities coming from the whole and broken.
2. Sketch a long-wall district for 26 hewers in a shift. In each case indicate the course of the ventilation by arrows, and show the position of all stoppings, regulators, and doors.

IV. Timbering :—
1. Show, by plan and section, how you would timber a main engine plane, with a bad roof.
2. Describe and illustrate, by plan and section, the method of timbering where a branch way leaves a main road at an angle of 90 degrees.

V. Barometer and thermometer :—
1. Describe the construction and use of the water-gauge, barometer, and thermometer.
2. Supposing you have two seams of coal in a shaft, one at a depth of 100 fathoms, and one at a depth of 250 fathoms, what will be the difference between the readings of the barometer at each seam?

VI. Measurement of air :—
1. State all the methods you know of measuring the air passing through the gallery of a mine, and describe fully the two methods generally adopted.
2. What quantity of air will pass through a circular shaft, 12 feet 5 inches diameter, when the velocity of the air is 6 feet per second.

VII. Safety-lamps :—
1. What is the principle of safety-lamps, and how far are they safe?
2. Describe and illustrate, with sketches, any two of the following safety-lamps, viz. :—The Davy, Clanny, Mueseler, and Marsaut.

VIII. Explosives :—
1. Describe fully the process of drilling a hole, and firing a shot, and state what precautions are necessary to avoid accidents.
2. Name the explosives you have been accustomed to, and state what arrangements you had for blasting under various circumstances.

IX. Coal Mines Regulation Act :—
State the regulations—
1. As to employment of boys between 12 and 16 below ground.
2. As to cases in which fencing is required.
3. As to examination of safety-lamps.
4. As to means of signalling in working shafts.
5. As to timbering.

FOR FIRST CLASS CERTIFICATES.

No. 2 Paper.

Time allowed—FIVE *hours.*

N.B.—The working out of all questions must be fully shown. No answer giving simply the result will be accepted.

I. Sinking :—
1. Describe, with sketches, the ordinary method of sinking, and give the dimensions of materials suitable for a 13-feet pit.
2. Explain fully, and illustrate with sketches, the method of walling a sinking pit.

II. Surface arrangements :—
1. Make a sketch showing the surface arrangements you consider necessary for a colliery 100 fathoms in depth, and having an output of 700 tons per day.
2. Describe, and illustrate by sketches and dimensions, the best examples of boilers, winding, pumping, and hauling machinery suitable for a colliery as above.

III. Underground arrangements :—
1. Draw a plan showing how you would lay out the workings of a colliery for 125 hewers in each shift.
2. Give number of men in each district.
3. State the quantity of air in each split, and indicate its course by arrows.
4. Show the position of all stoppings, crossings, doors, and regulators.
5. Show main-ways and landings.

NOTE.—One-half the output to be from bords and pillars, and one-half from long-wall workings.

IV. Gases :—
1. Name the principal gases met with in coal mines.
2. Describe the nature and properties of each, the circumstances under which they occur, and the effect they have upon animal life.

V. Ventilation :—
1. How would you ventilate a sinking pit?
2. See instructions upon the two accompanying plans, and explain how you would ventilate the workings shown thereon.

VI. Furnace and Fan :—
1. Describe and illustrate, with sketches and dimensions, a ventilating furnace and a ventilating fan, each suitable for a current of 100,000 cubic feet per minute.
2. Explain the respective merits of each for the ventilation of mines.

VII. Haulage :—
1. Describe, with sketches, any system of mechanical haulage with which you are familiar.
2. Describe the method of working it.
3. Explain fully the method of attaching and detaching tubs at the several landings and other places where necessary.
4. Describe the method of working curves and junctions.

VIII. Dams :—
1. Describe, and illustrate with sketches, the various sorts of dams used to stop water in mines.
2. State for what pressures of water they are suitable, and the precautions necessary in constructing them.

IX. Surveying and levelling :—
1. Describe the method of surveying with an ordinary compass and with a theodolite, and state the conditions under which you would make theodolite and magnetic surveys respectively.

2. Plot the following bearings :—

No.	Bearing.	Links.
1	S. 12 E.	332
2	S. 69 E.	357
3	N. 44 E.	475
4	N. 21 W.	260
5	N. 41 W.	400
6	N. 85 W.	802

3. Describe the process of levelling with a spirit level, and, in the following account, fill up the columns for rise, fall, and reduced level, and also work out the average inclinations in inches per yard.

—	Back Sight.	Fore Sight.	Horizontal Distance.
	Feet.	Feet.	Links.
1	1·85	10·85	100
2	8·45	1·17	100
3	3·65	11·02	100
4	8·52	0·67	100
5	3·34	9·94	100
6	0·89	8·03	100
7	10·72	3·50	100
8	2·55	8·55	100
9	1·35	8·43	100

METALLIFEROUS MINES REGULATION ACT.

Persons employed.

The continued decrease in the number of persons employed is due partly to the decline in the lead industry and the consequent discharge of men, and, secondly, to the depression in the iron trade, which has resulted in a reduced output of ore from the hematite mines. This decrease occurs year by year, and is likely to continue unless there is some decided improvement in metalliferous mining generally. There were 211 persons less employed during the year, the iron ore mines being responsible for 112.

For the purpose of comparison, I have this year given in the following tables the number of persons employed and the quantities of minerals raised in more detailed form than has hitherto been the case. It will thus be seen at a glance the extent of the iron ore mining in Cumberland and the Furness district respectively, and the number of persons employed and quantities of other minerals raised in the district under the Metalliferous Act.

TABLE showing NUMBER of PERSONS EMPLOYED in and about the MINES for the Years 1890 to 1894 inclusive.

—	Underground.			Above ground.							Total Underground and above ground.
	Males.			Ages 10 to 13.		Ages 13 to 18.		Above 18.		Total.	
	Ages 13 to 16.	Ages above 16.	Total.	Males.	Females.	Males.	Females.	Females.	Males.		
Iron Ore Mines, Cumberland	32	3,567	3,599	—	—	132	—	—	887	1,019	4,618
Iron Ore Mines, Lancashire	7	2,192	2,199	—	—	213	—	—	719	932	3,131
All other mines, district	2	626	628	2	—	166	—	—	309	477	1,105
Totals in 1894	41	6,385	6,426	2	—	511	—	—	1,915	2,428	8,854
„ 1893	59	6,503	6,562	3	—	507	6	—	1,987	2,503	9,065
„ 1892	96	6,838	6,934	10	—	575	—	—	2,078	2,663	9,597
„ 1891	73	6,818	6,891	10	—	542	—	—	2,112	2,664	9,555
„ 1890	101	7,159	7,260	15	—	514	7	—	2,379	2,915	10,175

Mineral raised.—

The decrease of 74,565 tons in the quantity of mineral raised, of which 72,026 tons was iron ore, has brought the production down to a smaller figure than it has stood at for many years. As will be seen from the figures, iron ore forms the bulk of the output under the Metalliferous Mines Act, and consequently a reduction or increase in the quantity of other minerals apparently affect the total very slightly. In the case of such minerals as lead and zinc, however, a small reduction or increase, although not apparent on the gross output, may affect a large number of persons, and it is an unsatisfactory feature of my Report that I have to record a reduction in the output of lead of 1,260 tons, or of 31 per cent. on last year's production.

In the accompanying table the information as to output of minerals usually given will be found more in detail than in previous years.

TABLE showing QUANTITIES of MINERALS wrought in TONS for 1894 and Four previous Years.

—	Name of Mineral.									
	Iron Ore.	Barytes.	Copper Ore.	Lead Ore.	Zinc Ore.	Stone, Clay, &c.	Slates.	Gypsum.	Ochre and Umber.	Total.
Cumberland -	1,286,590	117	—	1,750	7,228	—	2,786	19,770	144	1,318,385
Lancashire -	870,466	—	33	—	—	—	2,285	—	—	872,784
Northumberland -	—	5,494	—	1,042	10	—	—	—	—	6,546
Totals for 1894	2,157,056	5,611	33	2,792	7,238	—	5,071	19,770	144	2,197,715
„ 1893	2,229,082	7,964	167	4,052	7,034	9	4,689	19,238	45	2,272,280
„ 1892	2,200,402	7,156	74	4,731	6,815	—	4,463	19,310	150	2,243,101
„ 1891	2,394,990	7,162	—	5,780	5,011	60	3,318	19,907	173	2,436,401
„ 1890	2,399,626	5,849	—	6,168	4,869	54,919	2,978	20,854	97	2,495,360

Accidents.

Sixty-six separate accidents, an increase of 22 on the previous year, were reported to me during 1894. The fatal accidents numbered nine, with a loss of 13 lives, and there were 61 persons who received injuries of a more or less severe nature. Two of the deaths were caused by falls of ground, six by accidents in shafts, four from miscellaneous causes underground, and one (from injuries received in 1893) on the surface. A short description of each will be found in the list of accidents accompanying this report, whilst several of them are more fully alluded to under their respective headings.

An analysis of the accidents, showing the causes to which they were attributable, will be found in the following table, from which it will be seen that none were due to explosions of fire-damp.

TABLE showing the NUMBER and NATURE of the FATAL and NON-FATAL ACCIDENTS in 1894 and the TOTAL NUMBERS for the Years 1886 to 1893 inclusive.

Nature of Accident.	Number of Separate Accidents.	Number killed.	Number injured.
Explosions of fire-damp - -	—	—	—
Falls of ground - -	25	2	24
In shafts - -	11	6	8
Explosions of powder, &c. - -	7	—	8
Trams and tubs, and on inclined planes -	3	—	3
Miscellaneous underground - -	6	4	5
Machinery on surface - -	2	—	2
Miscellaneous on surface - -	12	1*	11
Totals 1894 - -	66	13	61
„ 1893 - -	44	12	33
„ 1892 - -	56	10	46
„ 1891 - -	65	12	54
„ 1890 - -	66	12	55
„ 1889 - -	64	16	48
„ 1888† - -	—	20	—
„ 1887 - -	55	15	40
„ 1886 - -	64	18	47

* Injuries received in 1893. † Non-fatal accidents not recorded.

All the fatal accidents occurred in Cumberland, and of the non-fatal accidents, 37, with injuries to 40 people, have to be credited to the same county; 19 accidents, with injuries to 20 persons, to Lancashire, and an accident to one person to Northumberland.

Falls of Ground.

The number of deaths from falls of ground has been unusually small, but in the total number of accidents there has been an increase, the figures for the year under notice being 25 accidents, two deaths, and 24 persons injured, as against 15 accidents, five deaths, and 11 injured in the previous year. The result cannot but be considered very gratifying, when the mortality from this cause in past years is taken into account, and as it is a class of accident which can only be avoided by constant care and watchfulness, it is to be hoped that by an extended system of inspection and supervision on the part of the officials, together with the hearty co-operation of the miners themselves, who can do do so much by a little forethought and care for their own protection, the result in the future may be as favourable as that I have now to report.

In neither of the cases mentioned above is it necessary to make any special remarks, both of them being quite accidental.

Shafts.

Four fatal accidents, with six deaths, under this heading, are a bad record for the year, and I am sorry to say that two of the most serious were due to errors on the part of the enginemen, who, in both cases, were lucky in not having verdicts of culpable negligence brought against them. A third was caused by the deceased falling down an underground "staple," which was not properly fenced (and for which the agent was afterwards prosecuted and fined), whilst the fourth occurred in the winding shaft whilst descending, and resulted in the deceased's head being severely crushed, but how the injury was caused there was no evidence to show, as he was alone at the time.

On September 24th an accident occurred at No. 5 pit, Montreal Mine, near Cleater Moor, by which two men, Michael Scott and Bernard Murphy, miners, met with their deaths through being precipitated down the shaft. The circumstances which led up to the unfortunate occurrence were as follows :—In April last operations were commenced to strengthen the headgear and at the same time to put some new pumps into the shaft. There were two cages in the pit, both of which were provided with a King's safety detaching hook, in addition to an apparatus for clutching the wood guide rods in case of a breakage of the rope. It was found that the iron plate through which the hook passed in case of an overwind, and so liberated the rope, was in the way of the crab rope used for lowering the pumps, and it became necessary, therefore, to remove the plate, and as this rendered the hook useless the latter was also taken off, and in its place there was substituted an old fashioned hook, which, on coming into contact with a cross beam, liberated the rope from the cage, but did not, as in the case of the King's hook, suspend the cage in the head gear. Should the hook come into operation from any cause it was expected that the clutch arrangement would come into action, and so arrest the downward movement of the cage. The apparatus referred to consisted of an arrangement of levers acting upon two pawls on either side of the cage which fall into contact with a double ratchet plate fixed on each guide rod in the shaft. On the rope becoming detached the levers are brought into play through the action of two india-rubber springs. It was given in evidence at the inquest that periodical trials were made with this apparatus by detaching the cage from the rope and that in no instance had it been known to fail.

On the day of the accident no ore was to be drawn, but several men, including the two deceased, went down the pit to effect repairs in the workings and for other purposes. Opportunity was taken of the pit being idle to repair the "keps" at the pit top, and for that purpose a temporary scaffold of loose planks was placed over the pit just below the "keps," and so arranged that the rope would run freely in the event of any winding being required. The engineman was aware of this, as he was on the heapstead and passed over the scaffold at the time it was erected, soon after 7 a.m. Shortly before 9 a.m. Mr. Wm. Black, the surveyor, and his assistant, Mr. Thomas Jenkins, were lowered down the pit from the *surface* landing. They completed their work, and on ascending the pit again in company with the overman, Richard Bawden, the cage was stopped at the same (surface) landing. Soon after the engineman received a signal from below that men were about to ride, and on getting the knock to go on, he raised the cage, but instead of stopping at the surface landing, was taking it to the pit top or ordinary stopping place, when the detaching hook came into contact with the temporary staging, releasing the rope from the cage, but for some reason the

pawls of the safety apparatus failed to strike the ratchets on the guides, and the cage, with the two deceased men, fell for some distance down the shaft before the pawls caught the wood guides. The explanation given by the engineman, Thomas Bland, at the time was that he had forgotten the existence of the scaffold, but at the inquest, where, after being cautioned by the coroner, he elected to give evidence, he stated as follows:—

"I live at 19, Birks Road, Cleator Moor, and on Monday, the 24th September, I was on " duty at my engine at No. 5 pit. I was told by my partner John Martin that morning that " they were going to repair the "keps," and I found out myself by going there that the work " was going on. I have been an engineman for 17 years. During that time there has been no " complaint against me, nor have I had any mishap. On the morning of the 24th September " I arrived at the pit at seven o'clock. I was informed about the improvements to be made to " the "keps," and at that time the right-hand cage was standing on the "keps." I let " it down to the surface, so that it would be clear of the "keps." About eight o'clock in " the morning I went to examine that cage, and on my way the banker Patrick McKay " called my attention to the signal wire. About ten minutes later Richard Bawden came " and I reported the wire to him. He and I went up on the pit top, across the planks, " to examine the wire, and he said he would get it put right. About nine or a little after " Thomas Jenkins and William Black came to the engine-house door and asked me had I " seen Richard Bawden, and had he gone down the pit. I told them I could not say whether " he had gone down the open cut or back to the hut. They said they wanted to go down the " pit. I told them the cage was at the surface, fully expecting that the banker would attend to " them. Someone shouted "lower away to No. 2 eye"; I did lower and left the cage standing " at No. 2 eye, after they had knocked one to say that all was clear. At 20 minutes past 10 " I got a signal, three knocks, indicating that men were coming up. I answered one, that I " was ready. They replied one, which meant raise cage. This was the first cage to be raised " that morning. I raised the cage to the surface, expecting the banker to be there to receive " it. I could not see the banker from where I was working; the banksman was not visible. " When the banksman was at the surface it was impossible for me to see him from where I " sit. He could make me hear by shouting, which is a customary thing when stopping at " the surface or lowering down to the surface. The banksman, Patrick McKay, has given " me orders to lower the cage to the surface on several occasions. When the cage is " coming up it was usually raised to the top, but the banksman has given me orders which " have made me raise the cage to the surface instead of to the pit top. On those occasions " I have obeyed his orders.

"Did you get any special signal when the fatal draw was made?—No, just the ordinary " signal to draw to the top. The only indication I got to draw to the top was by seeing " the banker on the permanent stage at the pit top and two of the joiners. One of the " joiners was in a kneeling position, as if he expected the cage coming through the "keps." " I took that as an indication to draw to the top, because I did not see the banker when the " other two cages were brought up. That was the reason why I was deceived. In my " opinion it was the banker's duty to be at the spot where the cage ran to. If in the third " draw I had not seen the banker at the pit top I would have stopped the cage at the surface, " as in the two previous cases. Beyond seeing the banksman, I had no other indication of " where the cage was to stop."

By Mr. Roberts (a juror): "I had my engine under such control that if I had got the " least warning I could have stopped it within a few inches."

By Mr. Chapman: "Not seeing the banksman at the top at the first draw, I assumed that " he was at the surface, and took that as an indication to draw to the surface."

It should be stated that after seeing four men lowered in the morning, McKay, as was usual when no ore was being drawn, ceased to act as banksman, and was engaged in general labourer's work, assisting the joiners at the "keps," &c., and there is no doubt the engineman was well aware of the practice on such occasions, and, further, the very position of the banksman when the fatal draw was made should have been a warning to him, as the former would not have been there in the absence of the scaffold.

After an inquiry lasting over 12 hours, the jury returned a verdict to the effect "That we " consider that Michael Scott and Bernard Murphy came by their deaths by accident through " an error of judgment on the part of Thomas Bland, the engineman."

One unsatisfactory feature of the case was as to the reason the safety clutching apparatus failed to act at a time when it was so much needed, and yet on other occasions had done its work successfully, but from experiments that have been made I think that the following explanation is a feasible one. As already explained, the levers which actuate the pawls are inside the cage near the top, and a tall man, unless he were kneeling down, would lean against one or other of these levers with his shoulders, and as a matter of fact one of the deceased

men was seen in that position when the cage came into sight at the top. On feeling the lever falling he would instinctively try to pull himself together, and in doing so prevent the levers from acting instantaneously, as was the case in this instance. Actual trials proved that a man in the way deceased stood could easily prevent the pawls from acting. Should the above explanation be the correct one, or even if such an occurrence is possible, it is very necessary that the levers of any similar safety contrivance should be well protected.

The second shaft accident, which resulted in the loss of two lives, occurred at the Southam Hematite Iron Ore Mine, near Bigrigg, on the 19th December, and was the result of an overwind at a sinking pit where no detaching hook was in operation.

On the day in question water was being drawn from the pit by means of two water barrels, one in either partition of the winding portion of the shaft. Dixon Nulty, the joiner and shaftsman, was told that there was some timber floating in the water and interfering with the valves of the barrels. Taking a labourer, William Wilson, who was accustomed to shaft work, with him, he descended the pit, and after finishing the necessary work, they were brought to bank again, but the barrel on which they were standing was about 2 feet above the surface level. They were then in full view of the engineman. Nulty then asked the banker to have the barrel lowered a little bit, and the latter shouted the order to the engineman. Instead of the barrel being lowered it instantly shot upwards with the men, who were crushed against the crown-trees of the headgear, and received such severe injuries that Wilson succumbed in a very short time, and Nulty only survived for three days.

It was evident that the accident could be attributed to one of two causes only, either defective machinery or to some error on the part of the engineman, Isaac Yeaberry, who very frankly admitted that he had no fault to find with the engine, which was in good order in every respect.

At the inquest held at St. Bees by Mr. Gordon Falcon, the Coroner for West Cumberland, on the body of William Wilson, evidence was given to the foregoing effect, and the engineman, who was cautioned by the coroner, also made a statement, which showed conclusively that he alone was responsible for the accident. He admitted that he had made a mistake, but at the same time could not explain exactly how it happened. As the second barrel contained some water, it was thought possible that its weight and that of the rope might have been sufficient to raise the empty barrel and the two men, but experiments, at which the engineman was present, showed that such a result could not be attained. The only conclusion I can arrive at is that on drawing the men to the surface level Yeaberry shut off steam and applied his brake, and then turned on a little steam to enable him to take the barrel to the pit top, and on getting the order to lower he had taken off the brake, forgetting the position of his reversing lever, when the barrel would rapidly ascend. There could not have been much steam on, however, or something must have given way.

The jury found "that the deceased was accidentally killed, and that Yeaberry was in fault, "but his fault did not amount to culpable negligence."

A similar verdict was returned by the jury at the inquest held at Whitehaven to inquire into the death of Dixon Nulty.

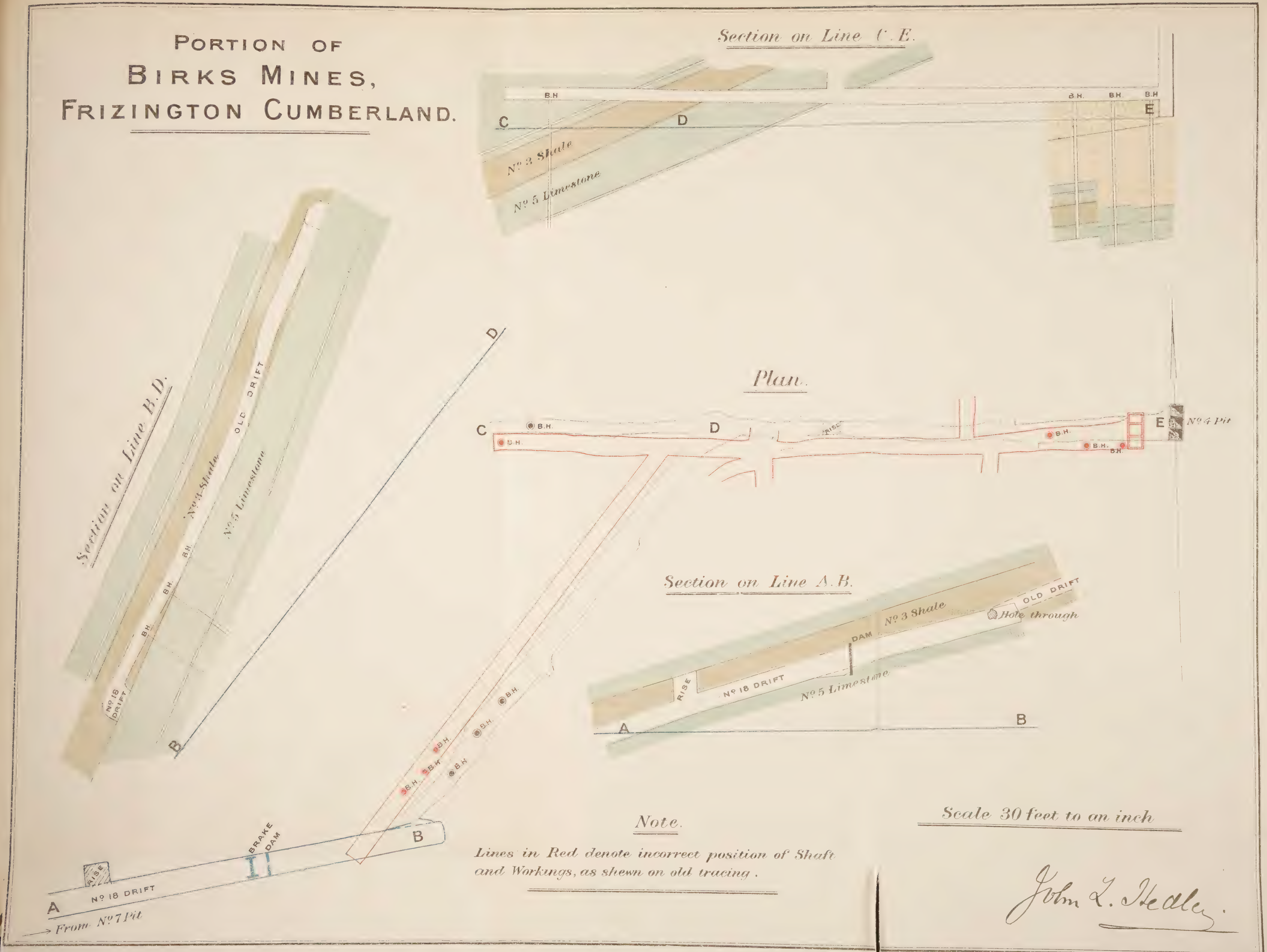
Miscellaneous Underground.

By Explosives, &c.

There were no fatal accidents from this cause, but the seven non-fatal accidents, resulting in injuries to eight persons, would probably have been prevented had more stringent regulations as to the use of explosives been in force at the different mines. Although there are special rules prohibiting the unstemming of shots, casualties from this cause have not ceased, and until the rules are strictly enforced there is very little prospect of their doing so. Many accidents of this class have occurred during the last few years, but I have never yet heard of a case where a man has been punished for a similar offence.

Irruptions of Water.

The most disastrous accident in this district, either under the Coal or Metalliferous Mines Acts, occurred on the 17th November at Birks Hematite Iron Ore Mine, situated at Frizington, Cumberland, whereby three lives were lost from an inrush of water from some old workings. The Frizington Mining Company, Limited, are the owners; Messrs Walker and Peile, of Whitehaven, the engineers; and Mr. James B. Kitchin the resident manager, and he has held that position for nearly 10 years, or about three years longer than Messrs. Walker and Peile have held their appointments. At that time, namely in 1887, there were five pits closed in



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the royalty, Nos. 1, 2, 3, 4, and 5, the workings of which were all filled with water. No. 7 pit was then in operation, and has been up to the present time. In July 1891 a rise drift was commenced from a certain point in the No. 7 pit workings to win some ore, which had been proved by borings to exist in the direction of the old No. 4 pit workings, and this was carried on continuously till December 1893. In August of that year it was thought desirable to remove some of the water in the old workings, in view of the new drift approaching in their direction and pumping operations were consequently commenced at the No. 1 pit, the workings of which were connected with those of Nos. 2, 3, 4, and 5, which had been abandoned for some years, the engineers being under the impression that all the water in No. 4 pit except that lying in the dip drift (B. D. on plan) would be removed by these operations. This expectation was realised when pumping ceased, in March 1894.

In October 1893 further precautions were taken by means of boring at the face of the drift, in the roof, and on either side, and a strong dam, fitted with a valve, was put in to regulate the flow of water in case of its being tapped by any of the boreholes. This dam was fitted with a door which had to be closed or put on a "trig" whenever shots were fired or when the men left the face of the drift for any other purpose. A further instruction was that no shots should be fired in the day shift, that is, when the bulk of the men were in the pit. All the above precautions were attended to, and the instructions carried out, until the drift was stopped in December 1893, when it was thought that the point of intersection with the old dip had been passed.

Nothing further was done in the drift till October 1894, when work was resumed, and continued till the day of the accident. The men were apparently told to adhere to the rules laid down for their guidance in the first instance, but they do not appear to have been rigidly enforced, and the men themselves admitted at the inquest that they felt so secure that they had repeatedly left the door of the dam open when they had been away from the face, and that not only had shots been fired with the door open on the morning of the accident, but that it was in that position at the time the water broke in, although the men were back from the face.

The front borehole was continued up to the time of the disaster, and the flank boreholes on the right-hand side of the drift were also put in for some distance after operations re-commenced, but the flank holes on the left-hand side were soon discontinued, as being unnecessary, for the following reasons:—No suspicion ever arose in the minds of anyone as to the correct position of No. 4 pit, or of the level (C. D. E.), and the only place where it was thought an error might exist was in the direction of the old dip (B. D.). Of the position of the workings of No. 7 pit, and of the new drift, the engineers were satisfied from check surveys they had been able to make. It was agreed, therefore, that if the old dip deviated to the west the two places would be too far apart to be connected by a borehole, and if, on the other hand, a mistake was made in the opposite direction or to the east the old dip would be in advance of the new drift, and that it would consequently be cut into by the leading borehole. As it turned out, however, as is shown on the plan, the direction of the old dip was right.

It should be stated here with reference to the boreholes, that they were all in an upward direction, the general opinion being that the old dip was driven in the top part of the No. 3 shale, which is 17 feet thick, whereas the new drift was in the bottom of the same bed, and that there would consequently be a thickness of 6 feet of shale between the two roads. This opinion was based upon the evidence the managers had been able to collect from men who had worked in No. 4 pit, and from information gleaned as to the nature of the ground proved by the boreholes near the bottom of the old dip as shown on the plan. The opinion thus formed, however, turned out to be an erroneous one, and consequently all the safety boreholes were practically valueless even if the position of the drift as shown on the plan had been correct.

For a few days a slight dampness had been noticed on the left-hand side of the drift, but not to such an extent as had been seen farther back, and no one anticipated the slighest danger from its appearance. The manager, Mr. Kitchin, however, who was in the drift on the morning of the accident, seeing that the moisture had increased, decided to stop work in the forebreast at the completion of the day's work and have a borehole put into the side at the point where the water was showing, and he marked the spot where this work had to be done on the following Monday.

On the manager leaving the place, the two men, Thomas Watson and David Harrison, went on with their work, and after firing two shots, which did not affect, however, the place where the water came in, they were getting their breakfast outside the dam when there was a loud report, followed by a sudden rush of water, which immediately enveloped Thomas Watson and carried him at headlong speed down the incline and along the level for a distance of about 200 yards, where he was afterwards found alive, but much shaken. The second man,

David Harrison, not so fortunate, must have been caught by some of the debris, for his body was found the same afternoon under a mass of loose material just beyond the bottom of the incline. A third man, Owen Kelly, who was with two boys, David Crone and Thomas Toy, at the bottom of the incline, ran to a side road called No. 11 working, and so escaped, whilst the two lads, who thought the noise was caused by a tub running amain, stopped in a man-hole and were suffocated by the water and debris, with which the hole was almost filled.

The No. 11 working above referred to is the place to which the men were warned to go in case of need, and where they went to get their bait until the place was stopped in December 1893, and had they continued to follow out their instructions there would have been no loss of life.

The injured man, Thomas Watson, was subsequently able to give evidence at the inquest, held by Mr. John Webster on the 19th November, the 12th December 1894, and the 2nd January 1895, and as he had been employed in the drift from its commencement and was in a position to give a minute account of all that transpired during its progress, it will be desirable perhaps to reproduce his evidence here, more especially as it corroborated not only the evidence of his fellow workmen, but also that called on behalf of the management. It was as follows, namely :—

I live at Greystone Terrace, Wath Brow, Cleator Moor. I am a miner, and recently worked for the Frizington Mining Company. I remember the accident on the 17th November last. On that day I went to my work at the Birks Pit at 6 a.m. I was engaged in driving No. 18 drift. David Harrison and I each bored a hole in the forebreast, or nearly in the forebreast. We completed those holes about 10 o'clock, charged them with dynamite, and fired them. We retired from No. 18, went through the dam, and just down the brake a little bit. We waited till the holes went off, and then went back up to the dam and got our bait. About half-an-hour after firing, the water broke in and came through the door of the dam. The water hit me, and I know of very little what took place after that. I had instructions as to how we were to conduct these boring operations from Mr. Kitchin, the manager of the mine, who was daily in attendance, and gave us directions from time to time, and who had also given us general instructions. Our instructions were to do the same as we were told in 1893; that in case we saw any danger of water we were to go to No. 11, where we would be perfectly safe; and that we were always to close down the door in the dam before we fired. At the time of the accident the door was not closed. We really did not think it was necessary, owing to the position in which we had our shot holes. We had also instructions to keep the door of the dam on the "trig," in case of the water breaking through, and that when we were out of the working place we were to keep the door on the "trig." When we left the place on the morning of the accident, after lighting the shots, the door was neither closed nor on the "trig."

By Mr. Hedley: We followed the night shift men, and I was the first man on the day shift. I met Nancurvis, one of the drift night shift men, that morning as I was going to my work. We had a conversation as to what had been done, but he made no suggestions respecting the work in No. 18. When we first went in there was a leading hole, but we did not do anything to it. The men on the day shift generally attended to the leading hole. I looked at it that morning, but did nothing to it. I do not know what depth it was. We were supposed to keep it 5ft. 6in. to 6ft. ahead, but I did not measure it. I had no instructions not to go on with the leading hole; we had other work to do, and we wanted to square up to the breast; that was the reason we did nothing to the leading hole. Josiah Boden, the deputy, was in the working at about eight o'clock; I was boring at the time. He just looked round to see that all was safe; he did not look at the leading borehole, and I do not remember that anything was said about it. Our manager, Mr. Kitchin, came in about nine o'clock. I had that morning discovered a slow dropping of water from a piece of rock on the left-hand side, back from the forebreast. I had previously noticed it was moist, but that was the first time I noticed a drop. I drew Mr. Kitchin's attention to it. Mr. Kitchin gave me instructions about it, and marked out where a hole was to be bored on the following Monday morning. That meant that on Monday morning there would be no working in the forebreast until the hole was bored. The hole was to be bored to prove this dampness, to see if there was any water behind it. I agreed with Mr. Kitchin that it was desirable to do this. I was not at all afraid that any water would come in at that point. After lighting the shots we went through the dam and five or six fathoms down the brake, and afterwards returned close to the dam to get our bait. Harrison and I have baited there since we went back to this work. In 1893 we used to get our bait at the foot of the incline.—Was that according to instructions? Well, I don't remember anything about where we were to get our bait. It was a more suitable place to get our bait—If it was suitable in 1893 it would be suitable in 1894, would it not? Yes, just the same, except it was further to walk.—But it would be the same in 1893? Yes; we went to the foot of the incline to be further away in case of anything occurring. We were

told by Mr. Kitchin that in case of anything occurring we were to make for No. 11 drift, which was about seven or eight fathoms from the foot of the incline. We got our bait in No. 11 when we first started the drift in 1893. We continued getting our bait at the brake foot, or in No. 11, until the work stopped in 1893, when we thought we had got past where the water was. When we started in 1894 we had instructions to carry out the same rules, but we did not go to bait at the bottom of the incline or into No. 11, because we thought it was too far to go. As we thought we had got past where the water was, we did not think the danger was so great, and we had got a bit hardened—we thought ourselves more secure. Mr. Kitchin, Mr. Boden, and Mr. Murphy were coming in at all times of the day. I don't remember them having been in at any time while we were getting our bait. It is possible they may not have known that we were baiting up at the dam.—You say your instructions were always to keep the door on the "trig." Are you correct in saying you were to keep it on the "trig" when men were inside boring holes? Is that not a mistake?—Well, it may be a mistake, but they told us that.—You did keep it on the "trig" when you were working? Yes, very often.

The Coroner: Then why had not you the door on the "trig" that morning, when you were boring? Because the bogies were then passing in and out.

Mr. Hedley: But the bogies were not passing in and out when you fired the shots? No.—And the only reason you give for not putting the door on the "trig" then was the position of the holes? Yes, they were back from the breast; they were not leading holes, and we did not anticipate any danger.—But you have told us your instructions were to place the door on the "trig" when you left the place any time, and why did you not do it? Well, just that we did not anticipate any danger; we always looked to have it down when we fired leading shots into the breast.—That was the reason why I asked you whether you had any conversation with the men of the previous shift. Were there any indications of a shot having been fired in the leading hole that morning? No; not in the leading hole.—Have there been any flank holes bored since you started this last time in October? Yes, I think so; but there have been none recently on the left-hand side. I do not know why they were left off. We were ordered to let the flank holes be, and just bore this hole in front. I myself was satisfied with those directions at the time. It was some time before the accident happened that we were told to leave the flank holes. We have on other occasions left the door open when we were firing small holes back from the breast. I cannot remember that on any of those occasions any of the officials of the pit were present when such shots were fired. I do not know whether they would know or not.

By Mr. Paisley (solicitor): The top of the sweating was better than half-way up the side of the drift, on the left-hand side, and extended down to the sole. I put my hand on it several times, and I also sounded that part of the drift. I found it damp, but not a great lot. I have worked as a miner for 20 years and more.—Can you tell me how many shots would be fired between the place where you saw the drop and the forebreast? I could not say. On my shifts four or five shots a day would be fired; and we would have been working for about a week after passing that place. I have said that I do not remember anything having been said at any time as to where we were to get our bait. That is true. The instruction to go into No. 11 was not given to me particularly, but to us all.—When? Oh, on different occasions.

By the Coroner: The sweating that I noticed was not unusual, and did not surprise me. It did not indicate to me any danger when I found my hand moist.

By a juryman (Mr. M'Laughlin): Is there anything in the Metalliferous Mines Act about these side borings?—Mr. Hedley: No, there is not.—Mr. M'Laughlin: Well, it is a pity; it ought to be.—Mr. Hedley: It is a pity.—Mr. M'Laughlin: It seems there is no compulsion?—Mr. Hedley: No, not under the Metalliferous Act.

An examination of the new drift subsequent to the accident showed that the water had broken in on the left-hand side, 37 feet nearer to the face than was expected and about 11 feet back from the face. A shell of shale 2 feet thick, which divided the old dip from the new drift, had been forced away by the volume of water, leaving a hole about 4 feet square in the side of the drift, as shown in the section A. B. An inspection of the old dip, section B. D., demonstrated the fact that there were grounds for the statements made by the men who originally worked there that the sole of the dip was not on the limestone, but was of shale, and though it was probably the intention of the then manager to continue the dip through the shale until the upper limestone became the roof, it is evident that the men were mistaken in supposing that they had gone so far.

It may be asked, why was not the dam, although the door was open, sufficient to arrest the flow of water to such an extent as to enable the men to escape. From the evidence it appeared that some minutes elapsed after the water first made its appearance and washed Watson away, and the time when the final crash came and Harrison was overwhelmed with

the debris, probably when he was making his way slowly down the incline through the stream of water passing through the door. Under ordinary circumstances the dam, which was constructed of wood, would no doubt have resisted the pressure, but the after examination showed that two lengths of pump stocks, 8 inches in diameter and 18 feet long, had become disconnected from a range of pipes which had been left in the old dip, and sliding down the slippery floor of the inclined drift, had come into contact with one of the main uprights of the dam with the force of a heavy battery ram, and so caused one side of it to give way, with the consequent heavy rush of water, which carried drum wheel, timber, rails, and everything else before it.

Had the dam door been shut, in all human probability the pipes referred to would not have been disturbed from their position in the old dip.

That the plans were incorrect in some respects was without doubt, and a careful inquiry was instituted with the view of discovering where the error lay.

When Messrs. Walker and Peile took charge of the mine in 1887, two tracings came into their possession, on the one being the old workings of Nos. 1, 2, 3, 4, and 5 pits, whilst the second tracing showed the workings of No. 7 pit, then in active operation. At a subsequent date a new plan was made by Messrs. Walker and Peile by transferring the workings shown on the two tracings in question on to one sheet, which then became the working plan, on which the surveys of No. 7 pit workings were plotted from time to time, due allowance being made for the variations of the magnetic meridian.

Of the correctness of their own surveys the engineers were satisfied, as they were able to check the work by means of the staple pits at different points in the workings, and that they were justified in the assumption was proved by the check survey afterwards made.

The short extent of workings on the south side of No. 4 pit also led them to believe that reliance could be placed on their accuracy.

Whether a surface survey to check the position of the different shafts was made at the time the transfer was made is not known, but in the absence of any evidence on the point it is fair to assume that it was not.

Subsequent to the accident a complete survey was made both of the surface and of the underground roads between Nos. 4 and 7 pits, which proved that the relative positions of those two shafts were incorrect, with the result that the old dip was thrown further to the east than is shown on the working plan (*see* sketch herewith).

The survey also proved that the transfer from the two old tracings had been correctly made by Messrs. Walker and Peile's surveyor, and that the error as to the position of the No. 4 pit was one which had been made many years ago, but by whom it is impossible to say, as the plans had passed through the hands of several mining engineers before coming into the possession of the gentlemen at present in charge of the mines.

Had a complete survey of the surface been made in recent years it is probable the mistake would have been discovered, so far as the position of No. 4 Pit was concerned, but no suspicion seems to have arisen as to the correctness of the plans in that respect, and consequently such a course was never suggested. Even had this been done, and the error rectified, the mistake as to the respective positions of the new drift and the old dip in the No. 3 shale would, for the reasons mentioned before, probably have led to a like disaster.

A question was raised by Mr. Marston, the miners' agent, at the inquest, as to the feasibility of pumping out the water from the old dip before an attempt was made to effect the communication, and Mr. Peile, in his evidence, stated that this could have been done had plant been put down for the purpose. It is quite true that this could have been done, but had the point been followed up it would have transpired that this mode of procedure was discussed when the bulk of the water was removed from No. 4 pit, but rejected on the ground that its cost would have been out of all proportion to the value of the ore to be won, and, further, that it was considered quite possible, due precautions being taken, to tap the water in the manner agreed upon, without danger. Unfortunately these precautions were neglected by the men themselves, with the result that three lives were practically thrown away.

The operations in progress for tapping this water had recently been brought to my knowledge by my assistant, Mr. Leck, who visited the mine a fortnight before the accident, and after an examination of the new drift and a careful inspection of the plans with the engineers and manager, reported to me that due precautions were being taken for the protection of the men, and that he would watch the operations there.

The verdict of the jury was to the effect "that the deceased were accidentally drowned on "the 17th November 1894, owing to the water in the dip workings of No. 4 pit breaking "into the No. 18 working of No. 7 pit, Birks, Frizington, but the jury blame the "engineers for not pumping the water from No. 4 pit immediately they became unaware of "its whereabouts."

The latter part of the verdict was evidently based upon the suggestion thrown out by Mr. Marston, that the water might have been pumped from the old dip, but in adopting the course they did, Messrs. Walker and Peile cannot be said to have acted in any way contrary to the usual practice in such cases, and I am not prepared, therefore, in view of all the circumstances, to endorse it.

The lesson to be learned from this accident is one that has been taught in so many similar cases, namely, to look upon all old plans with suspicion unless they can be verified by actual survey, and, to accept information tendered from memory or hearsay only, merely as suggestions for one's guidance and aids to investigation, and never as actual facts.

The sketch accompanying this Report shows, first, a plan of so much of No. 4 pit, old working, and of the drift of No. 7 pit as is necessary to explain the cause of this accident, the red lines giving the position of No. 4 pit level and dip as shown on the working plan, and the black lines giving the actual position of those workings as proved by subsequent survey; secondly, a section (A. B.) of No. 18 drift, showing the position of dam and place of irruption; thirdly, a section (B. D.) of the old dip, showing its position in the No. 3 shale; and, fourthly, a section of the level from No. 4 pit.

Fatality reported, but not classed as a Mine Accident.

February 5th.—John Burns, 30, labourer, was engaged in filling up a hole, containing water, on the surface near to the Longlands Pit, Cleator, when he is supposed to have had a fit and fallen backwards into the water and been drowned.

Prosecutions.

I have not heard of any proceedings having been taken against any of the workpersons by owners, agents, or managers for breaches of the Act or Special Rules, and the only occasion on which I have found it necessary to ask your permission to prosecute was in the case of Mr. James Harper, the agent of the Winder Gill Iron Ore Mine, Winder, Cumberland, for a breach of General Rule 7, in not having the top of a working shaft properly fenced. Although I considered it my duty to bring the case to your notice, the breach of the rule was not of a flagrant nature, and was due more to oversight than to any other cause, for as the defendant said, he knew the back of the shaft was not fenced, but it never occurred to him that it should be so protected, as no one but the top hand had any right to go there. He was aware, however, that other men had been seen there, and that should have put him on his guard. Unfortunately, one of the men who was going to the back of the shaft, because it was drier, to get his breakfast, tripped over a piece of timber and fell down the pit.

The case was heard at the Whitehaven Petty Sessions, on August 30th, before H. Fox, Esq. (in the chair), J. N. Dickinson, Esq., J. D. Watson, Esq., and W. H. Watson, Esq., and after the Bench had retired to consider their decision, the Chairman said they were agreed that the shaft was not properly fenced and that there must be a conviction. They inflicted a penalty of 5*l*.

Exemptions.

There have been no exemptions granted during the year.

Abandoned Mines.

Plans and sections from the following mines have been forwarded to the Home Office in accordance with section 14, Metalliferous Mines Act, 1872:—

September 15th.—Crossfield, Cleator, Cumberland. Plans of Nos. 1, 3, 4, 6, 7, 8, 9, 10, 11, 12, 14, 15, and 17 pits. Iron ore (red hematite). Ore exhausted.

October 3rd.—Longlands, Dalton-in-Furness, Lancashire. Iron ore (red hematite). Not sufficient ore found to justify further expenditure.

October 27th.—Woodend, No. 10 Pit, Egremont, Cumberland. Iron ore (red hematite). Ore exhausted.

GENERAL REMARKS.

It is very gratifying to find that the system of inspection previous to the men commencing work and during the shifts, is improving day by day, and that mines where efficient inspection is not carried out are very much the exception, and it is to be hoped ere long that

such a mine will be unknown in this district. It is all very well to argue, as some do, that the miners are practical and competent men, and as well able to look after themselves as any official would do, and I do not doubt for a moment that there are such men, although even they may, from their eagerness to get on with the work, run more risk than they should do, but it must not be forgotten that there are others who are not so well qualified to act on their own behalf, and require the supervision of skilled men to ensure their safety so far as is practicable.

Appended to this Report will be found :—

1. List of fatal accidents under the Coal Mines Regulation Act, 1887.
2. List of fatal accidents under the Metalliferous Mines Regulation Act, 1872.
3. Report by Mr. R. P. W. Oswald.
4. Report by Mr. G. F. Bell.
5. Report by Mr. Wm. Leck.

I have, &c.
JOHN L. HEDLEY,
H.M. Inspector of Mines.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Office, Whitehall, London, S.W.

MINES CLASSED UNDER THE COAL MINES REGULATION ACT, 1887.

A LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom within one year and a day from the date of the ACCIDENT, in Mr. HEDLEY'S DISTRICT comprising the COUNTIES of NORTHUMBERLAND, CUMBERLAND, and the NORTH PART of DURHAM, during the year 1894.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost.					
										Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1	1893. June 22 6.0 a.m.	3	Cramlington -	Northumberland	Cramlington Coal Co., Ld.	George Matthews	32	Hewer -	Inquest attended. Deceased was working under the top coal, when part of it fell on to him from a "slip." There were plenty of sprags in the place, but it was not thought necessary to use them.	–	1	–	–	–	1
2	1894. Jan. 6 3.40 a.m.	10	Pegswood -	Ditto -	Bentinck West Hartley Colliey Co.	Henry Thompson	14	Driver -	Inquiries made and inquest attended. The deceased fell in front of some tubs he was improperly lowering down an incline, without sprags.	–	–	–	1	–	1
3	Jan. 8 5.15 p.m.	3	Whitehaven -	Cumberland -	Whitehaven Colliery Co.	Thomas McLoughlin.	29	Stoneman -	Inspection made and inquest attended. He had just fired a shot with a battery in a stone drift, when a stone fell from the side, about 40 yards from the face, on to his head, injuring him in such a manner as to cause his death some days after.	–	1	–	–	–	1
4	Jan. 8 12.30 a.m.	1	Washington -	Durham -	Washington Coal Co.	John Pringle -	57	Shifter -	Inspection made and inquest attended. The deceased, with other men, was walking along an engine plane going to work, when a fall of stone took place, part of which caught the deceased. The roof was considered to be good.	–	1	–	–	–	1

List of Fatal Accidents—*continued*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
5	Jan. 8 10 30a.m.	8	North Seaton	Northumberland	Cowpen Coal Co., Ld.	John Hewitt -	43	Pumper -	Inspection made. He was going outbye, and stepped on to the full road to allow the pony and empty set to pass him, evidently without looking, and was caught by the pony's limmers and thrown under the full tubs. There was any amount of room, but he should have gone into one of the refuge places, which were every 10 or 15 yards apart.	–	–	–	1	–	1
6	Jan. 8 2.0 p.m.	8	Broomhill -	Ditto -	Broomhill Coal Co., Ld.	Issaac Wright -	51	Cartman -	Inquest attended. Deceased was unwisely riding on the top of a cart of hay when the horse took fright, and, before he could pull it up, he was caught against some steampipes under which he had to pass.	–	–	–	–	1	1
7	Jan. 10 2.15 p.m.	9	Harrington, No. 9.	Cumberland -	James Bain & Co. -	John Lewis -	33	Hewer -	Inspection made and inquest attended. He was crushed between the timber and the tubs when riding on the full sett on going outbye, contrary to rules.	–	–	–	1	–	1
8	Jan. 10 9.10 a.m.	1	Urpeth, Busty	Durham -	Charles Perkins & Partners.	John Davidson Wilson.	35	Colliery Manager.	Inspection made and inquest attended. Deceased was examining the underground endless rope haulage sheave when the rope caught his hand, and he was drawn amongst the machinery.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
9	Jan. 10 1 p.m.	5	Urpeth, "C."	Durham -	Charles Perkins & Partners.	George Pigford -	19	Hewer -	Inquest attended. A fall of stone. It seems that the deputy overman, who also was slightly injured, had examined the place immediately before the accident, and considered it safe. The stone fell from a slippery parting.	–	1	–	–	–	1
10	Jan. 16 2 a.m.	8	Byer Moor -	Ditto -	John Bowes & Partners, Ld.	James Sylkie - William Henderson.	47 29	Shifter - Ditto	Inspection made and inquest attended. These men were bottom cutting, and had just about finished their work when a large fall of post stone took place, killing them on the spot. According to the evidence the place was well timbered, and it is surmised that they had undermined the props, six of which were afterwards found under the stone.	–	2	–	–	–	2
11	Jan. 17 11 a.m.	5	Ouston "E" -	Ditto -	Charles Perkins & Partners.	Jas. Wm. Wilde	13	Screener -	Inspection made and inquest attended. The boy was engaged about the screens, and was sent by the chargeman on an errand, and not returning search was made, and deceased was eventually found at the bottom of a loaded waggon. No one could say how he got there, but it is thought that he fell through the hole which was unfenced at the end of the belt screens.	–	–	–	–	1	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
12	Jan. 18 Noon 12	7	Dudley -	Northumberland	Cramlington Coal Co., Ld.	Robert Clark -	20	Hewer and Putter.	Inspection made and inquest attended. Fall of roof. The deceased and his marrow had evidently been too keen to send out coal, and instead of getting up the bottom coal and setting timber as directed by the deputy, they had gone on working out the top coal, and so exposed too much of the roof unprotected.	–	1	–	–	–	1
13	Jan. 18 10.15a.m.	4	Seghill - -	Ditto -	Joseph Laycock & Co.	Ralph Ward -	14	Driver -	Inspection made and inquest attended. The pony which the deceased was driving swerved and drew out some props, the baulks following, and causing a fall of stone, which caught and killed the deceased. The road was in good order.	–	1	–	–	–	1
14	Jan. 20 9.0 a.m.	1	Bedlington (Doctor).	Ditto -	Bedlington Coal Co., Ld.	Tim. McSheeny	29	Hewer -	Inspection made and inquest attended. The deceased was going up the self-acting incline bank to his work, and by some means got between the two setts at the meetings. He might have been trying to pass the empty sett, which was travelling very slowly, and forgot that the full one was coming down.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
15	Jan. 27 7.45 a.m.	2	Wear Mouth -	Durham - -	Wearmouth Coal Co., Ld.	Edward Harrison	29	Engineman	Inspection made and inquest attended. The deceased was repairing the cylinder of his engine, and had the assistance of a boy, who, on being told to move a certain lever, got hold of the wrong one, and by doing so caused a rush of steam on to the place where the deceased was standing. Before starting to work at the cylinder the deceased should have closed the shut-off valve, and then in all probability no accident would have occurred.	–	–	–	1	–	1
16	Jan. 31 2.0 p.m.	9	Cramlington -	Northumberland	Cramlington Coal Co., Ld.	George Hamilton	17	Set rider -	Inspection made and inquest attended. Deceased was riding up a bank, and he must have either slipped off his seat or fallen when getting on. He was crushed by the tubs passing over him.	–	–	–	1	–	1
17	Feb. 7 6.45 p.m.	3	East Stanley -	Durham -	James Joicey & Co., Ld.	Luke Dodds -	58	Hewe -	Inspection made and inquest attended. The deceased was commencing to work in a place which he and the deputy had a few minutes betore pronounced safe, when a fall of stone took place.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
18	Feb. 8 1.15 p.m.	8	Tanfield Lea -	Durham - -	James Joicey & Co., Ld.	John Thos. Trewick.	17	Putter -	Inquest attended. Deceased was driving along a road when one of his tubs got off the way and knocked out some props and planks, causing a fall of stone to take place.	–	1	–	–	–	1
19	Feb. 15 4.0 a.m.	7	Walker -	Northumberland	Walker Coal Co., Ld.	Joseph Barnes -	56	Wasteman -	Inquest attended. Barnes was engaged drawing props in a return airway when some stone fell and broke his leg, and he died some time after. The place appears to have been considered quite safe.	–	1	–	–	–	1
20	Feb. 20 2 p.m.	5	Coxlodge -	Ditto -	Burradon and Coxlodge Coal Co., Ld.	John Thos. Watson.	37	Hewer -	Inspection made and inquest attended. After firing a shot in the coal the deceased returned to his working place, and was immediately caught by a fall of stone.	–	1	–	–	–	1
21	Feb. 22 6.20 a.m.	1	Seaton Moor -	Cumberland -	Flimby and Broughton Moor Coal and Fireclay Co., Ld.	Jonathan Gate -	58	Fireman -	Inspection made and inquest attended. It appears that the deceased was pushing an empty tub into a cage, and by some means got to the wrong side of the pit, which had been left unfenced by the banksman, and fell down the shaft.	–	–	1	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous. Underground.	Above Ground.	Total.
22	Mar. 5 2 a.m.	8	Burnopfield -	Durham -	John Bowes & Partners, Ld.	John Lown -	63	Stoneman -	Inquiries made. On leaving the cage at the shaft top he slipped and broke his thigh. On the 14th July he died, and at the inquest the jury came to the conclusion that the deceased died from heart disease, accelerated by the accident.	–	–	–	–	1	1
23	Mar. 6 6.30 a.m.	1	Whitehaven -	Cumberland -	Whitehaven Coal Co.	Wm. Nicholson	25	Labourer -	Inspection made and inquest attended. The deceased was opening a gate to allow a locomotive and waggons to pass, which were coming down an incline, and apparently had not been able to get out of the way before they caught him. His leg was broken, and he died after being removed to the infirmary.	–	–	–	–	1	1
24	Mar. 22 3.0 p.m.	6	Harton - -	Durham -	Harton Coal Co., Ld.	Robert Burton -	49	Hewer -	Inquiries made. Whilst at work a slight fall of coal cut one of his fingers, and blood poisoning set in, afterwards causing his death.	–	–	–	1	–	1
25	Mar. 30 9.30 p.m.	8	Backworth (Church).	Northumberland	Owners of Backworth and West Cramlington Collieries.	Thomas Veitch -	36	Brakesman	Inspection made and inquest attended. Scalded at a man-hole door of a boiler. He endeavoured to take off the man-hole door, when, according to the evidence, there were still five pounds pressure showing on the steam-gauge, when the steam and water flew out and scalded him.	–	–	–	–	1	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
26	Apr. 3 12.30p.m.	7	Choppington "B."	Northumberland	Bebside Coal Co., Ld.	Robert. A. Scott	16	Waggon-lad	Inspection made and inquest attended. When lowering waggons towards the screens he was sitting on the brake lever of one of the waggons (a position he should not have been in), and must have slipped and fallen under the wheels.	–	–	–	–	1	1
27	Apr. 12 10.30p.m.	6	Cowpen (Mill)	Ditto -	Cowpen Coal Co., Ld.	George Green -	58	Stoneman -	Inquest attended. The chargeman had examined and then sent the deceased in to make the place safer by setting props, and when doing so a stone fell and killed him.	–	1	–	–	–	1
28	Apr. 19 Noon 12	6	Ashington -	Ditto -	Ashington Coal Co. -	Wm. Willis -	14	Landing boy	Inspection made and inquest attended. He was standing with his back against a large sheave, and alongside a rope running over another sheave, when the large sheave began to move, and in trying to get out of the way he was in some way drawn in between the two sheaves.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
29	May 10 9.0 a.m.	5	Coanwood -	Northumberland	Coanwood Coal Co. -	Thomas Nixon -	55	Hewer -	Inspection made and inquest attended. Deceased and another man were engaged in driving a drift into the hill side, and had got about 8 yards in; 6-inch baulks were set every 2 feet and polling driven in advance. They had got ready for another baulk, when the innermost one reeled out, and the place came in for about 4 yards from the face, burying the men. The weight of the loose ground above on the front end of the polling had evidently pressed the latter down, and so forced the baulk out.	–	1	–	–	–	1
30	May 24 4.0 p.m.	9	Walkmill -	Cumberland -	Moresby Coal Co., Ld.	William Robinson.	22	Washing machine attendant.	Inspection made and inquest attended. Instead of using an iron rod to force the coal into a hopper connected to an elevator, the deceased foolishly jumped on to the coal, which rolled over him, and he was suffocated before assistance could be got.	–	–	–	–	1	1
31	May 26 8.30 a.m.	3	Cramlington	Northumberland	Cramlington Coal Co., Ld.	G. R. Mitcheson	14	Driver -	Inquest attended. From the evidence he appears to have tripped up whilst leading his pony and fallen between the tub and the wall side.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
32	June 5 10.40a.m.	5	Washington -	Durham -	Washington Coal Co.	Robert Fullerton	31	Engine plane man.	Inspection made. A fall of stone came on to him, caused by a socket on the rope getting fast to a sheave and drawing the props out. The road and arrangements were in good order, and it is difficult to understand how the socket became jammed between the sheave and the frame, which are made with a view to prevent such an accident.	–	1	–	–	–	1
33	June 8 11.0 a.m.	3	Cramlington -	Northumberland	Cramlington Coal Co., Ld.	Fred Williams -	36	Stoneman -	Inquest attended. Deceased and another man were taking out a baulk, when he got his hand slightly crushed. Died from blood poisoning.	–	–	–	1	–	1
34	June 11 11.30a.m.	6	St. Hilda -	Durham -	Harton Coal Co., Ld.	John Gallagher	14	Driver -	Inspection made and inquest attended. He was found dead alongside his full tubs. Possibly he was attempting to get from one side of the road to the other by crossing the limmers, and got his head crushed against a baulk.	–	–	–	1	–	1
35	June 16 9.45 a.m.	2	Clifton -	Cumberland -	Allerdale Coal Co., Ld.	Joseph Gates -	—	Contractor -	Inspection made and inquest attended. Deceased, who was road repairing with other men, went to work in another part of the same roadway, and was afterwards found under a fall of stone. What caused the fall is not known.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
36	June 22 9.15 p.m.	5	Seaton Delaval	Northumberland	Seaton Delaval Coal Co.	W. T. McPherson	31	Stoneman -	Inquest attended. The deceased was told by the chargeman, who was present when the accident happened, to take some stone down, and on knocking a prop out the stone fell on him.	–	1	–	–	–	1
37	June 25 4.0 p.m.	7	Broomhill -	Ditto -	Broomhill Coal Co., Ld.	William Tate -	28	Hewer -	Inspection made. He was attempting to get into the workmen's carriages when in motion, and fell under the wheels.	–	–	–	–	1	1
38	June 26 6.45 a.m.	1	East Holywell	Ditto -	East Holywell Coal Co., Ld.	Andrew Bell -	13	Driver -	Inquest attended. When some tubs were moving, deceased attempted to couple them, and his head was crushed. He should have waited till they were at rest.	–	–	–	1	–	1
39	June 30 4.0 a.m.	5	Emma - -	Durham -	Stella Coal Co. -	Matthew Heslop	61	Shifter -	Inspection made and inquest attended. Whilst preparing a place for the hewers which had been standing for some time, a fall of stone caught him.	–	1	–	–	–	1
40	July 2 9.0 a.m.	3	Netherton Hall	Northumberland	William Wood -	Thomas Boll -	62	Hewer -	Inspection made and inquest attended. Deceased, after firing a shot in the coal, was reaching over a tub, when some stone which had been shaken by the shot fell and broke his leg. Died from blood poisoning.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
41	July 12 4.15 p.m.	7	Washington -	Durham -	Washington Coal Co.	John Lee -	40	Hewer -	Inspection made. Deceased was riding on the full sett, contrary to rules, and for some reason did not get off when approaching the "kip," and was caught against a baulk.	–	–	–	1	–	1
42	July 12 7.15 p.m.	3	Seaton Delaval	Northumberland	Seaton Delaval Coal Co.	John Frame -	20	Stower -	Inspection made and inquest attended. Deceased was engaged ridding stone after a shot had been fired, and to facilitate the work he removed a prop, causing a fall of roof.	–	1	–	–	–	1
43	July 18 7.0 p.m.	3	Clara -	Durham -	Stella Coal Co. -	Edward Shipley	52	Master shifter.	Inspection made and inquest attended. As deceased was talking from an inset to the onsetter at the bottom, his head was caught by the descending cage. There was no reason why he should have been in such a position, as there was a special signal between the seams.	–	–	1	–	–	1
44	July 19 12.35a.m.	3	Allhallows -	Cumberland -	The Allerdale Coal Co., Ld.	Joseph Lightfoot	59	Packer -	Inspection made and inquest attended. This man was killed by a fall of stone whilst engaged packing in a longwall face. He had only been in the place a few minutes. The place was considered safe.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
45	July 20 11.45a.m.	11	Springwell -	Durham -	John Bowes & Partners, Ld.	Robert Ritson -	32	Deputy -	Inspection made and inquest attended. Deceased and another experienced man were drawing out chocks, &c., between the goaf and the coalface, when some stone fell.	–	1	–	–	–	1
46	July 24 Noon 12	6	Blackett -	Northumberland	Blackett Coal Co. -	Harland Teesdale.	28	Shunter -	Inspection made and inquest attended. Deceased was shunting waggons with a horse, and on trying to pass between the buffers when the waggons were too close, was caught and crushed.	–	–	–	–	1	1
47	July 26 10.0 a.m.	4	Bowthorn -	Cumberland -	Whitehaven Hematite Iron and Steel Co., Ld.	Richard Johnson	66	Hewer -	Inquest attended. It appears that deceased had found the roof in his working place unsafe, and when in the act of setting a prop it fell on to him.	–	1	–	–	–	1
48	Aug. 2 9.30 p.m.	2	North Seaton	Northumberland	Cowpen Coal Co., Ld.	John Dobson -	26	Shifter -	Inquest attended. Deceased was working in a longwall face when some stone fell on him. The chargeman had examined the place only five minutes before the accident, and considered it all safe.	–	1	–	–	–	1
49	Aug. 3 10.30a.m.	5	Wearmouth -	Durham -	Wearmouth Coal Co., Ld.	Alfred Boundy -	14	Driver -	Inquiries made. He was driving a set of empty tubs, and received an injury to his head, but there was nothing to show how the accident happened.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

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50	Aug. 25 4.0 p.m.	10	St. Helens -	Cumberland -	St. Helens Colliery and Brick Works Co., Ld.	Daniel Doran -	60	Waggonman	Inspection made and inquest attended. While breaking a waggon of small coal down the screen siding, his arm being around the buffer, another waggon had, unobserved by him, followed and jammed the upper portion of his arm, causing injuries which resulted in his death.	–	–	–	–	1	1
51	Aug. 28 11.0 a.m.	5	East Holywell	Northumberland	East Holywell Coal Co., Ld.	George Mowtel	17	Putter -	Inspection made and inquest attended. A fall of roof took place on a main travelling road and caught the deceased.	–	1	–	–	–	1
52	Sept. 10 7.30 a.m.	1	Radcliffe -	Ditto -	Radcliffe Coal Co., Ld.	Andrew Hedley	17	Ditto -	Inspection made. Burnt by gas. The deputy found some fire-damp in the place, but neglected to fence it off. He sent the hewer into another place, but did not see the deceased, who went in to ascertain if there was a full tub ready, when the gas ignited at his naked light.	1	–	–	–	–	1
53	Sept. 14 1.0 p.m.	3	Cambois -	Ditto -	Cowpen Coal Co., Ld.	William Beattie	32	Hewer	Inquest attended. He was caught by some unspragged coal falling when he was kirving. His brother was at the same time drilling a shot hole in the coal, which had only just been examined by the deputy.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

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54	Sept. 17 12.50p.m.	10	Bedlington -	Northumberland	Bedlington Coal Co., Ld.	James Cobb -	13	Tub-coupler	Inspection made and inquest attended. Deceased was engaged coupling on tubs at the top of an enless rope bank, and must have either been riding on the rope at the time or carelessly walking alongside it, for he was drawn among the sheaves and killed.	–	–	–	1	–	1
55	Sept. 25 9.40 p.m.	4	Whitburn -	Durham - -	Harton Coal Co., Ld.	Henry Knox -	30	Hewer -	Inspection made and inquest attended. Deceased was found under a stone, which had fallen while he was at work.	–	1	–	–	–	1
56	Oct. 8 5.0 a.m.	2	Cramlington -	Northumberland	Cramlington Coal Co., Ld.	William Hogg -	46	Ditto -	Inquiries made. Deceased was commencing to kirve the coal when it fell on to him. His marrow was only a few feet from him, and was not injured.	–	1	–	–	–	1
57	Oct. 9 8.40 a.m.	6	Burradon -	Ditto - -	Burradon and Coxlodge Coal Co., Ld.	Robert Gascoigne	52	Ditto -	Inspection made and inquest attended. After firing a shot in the coal the deceased returned to work, when a fall of stone took place. From all appearances the place was properly timbered, but the stone fell from slippery partings and top.	–	1	–	–	–	1
58	Oct. 17 4 a.m.	7	Usworth -	Durham - -	John Bowes & Partners, Ld.	James Smith -	21	Sett-rider -	Inspection made and inquest attended. Deceased was riding at the back of the sett, when the tubs knocked some props out, causing the roof to fall on to him.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

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59	Oct. 23 3.30 p.m.	10	Buckhill -	Cumberland -	Allerdale Coal Co., Ld.	William Graham	32	Carpenter -	Inspection made and inquest attended. Whilst engaged in the shaft the winding rope broke, and he fell to the bottom.	–	–	1	–	–	1
60	Oct. 24 9.0 a.m.	2	Brownrigg -	Northumberland	J. Armstrong -	Robert Young -	36	Hewer -	Inspection made. Suffocated by stythe. The deceased, it would seem, had gone into the place where he met his death either out of curiosity or to get something. He had been working there on the previous day with the owner of the mine, but, owing to the foul air, he had been forbidden to go in by the owner.	–	–	–	1	–	1
61	Oct. 25 4.0 a.m.	3	Usworth -	Durham -	John Bowes & Partners, Ld.	Robert Carr -	43	Under-manager.	Inspection made and inquest attended. Deceased was passing over some empty tubs, and when they began to move he was thrown off and fell amongst them, and injured so severely that he died a few hours afterwards.	–	–	–	1	–	1
62	Oct. 26 11.0 a.m.	6	Hebburn "A."	Ditto - -	Wallsend & Hebburn Coal Co., Ld.	Joseph Jackson	49	Shifter -	Inspection made and inquest attended. Whilst re-adjusting a prop, the baulks above slipped down, followed by a fall of stone.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

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										Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
63	Oct. 29 9.15 p.m.	4	Wallsend -	Northumberland	Wallsend & Hebburn Coal Co., Ld.	Thomas Hamar	38	Sinker -	Inquest attended. Whilst being drawn up the shaft in the loop with other men, he slipped off, and, falling into the water beneath, was drowned. (*See* Report.)	–	–	1	–	–	1
64	Oct. 31 1.30 p.m.	8	St. Helens -	Cumberland -	St. Helen's Colliery and Brick Works Co., Ld.	James Morrison	13	Greaser -	Inspection made and inquest attended. When cleaning the road he was caught by a sett. Older and more experienced boys should be employed for this work on engine planes.	–	–	–	1	–	1
65	Nov. 2 3.0 p.m.	9	Twizell -	Durham -	James Joicey & Co., Ld.	William Sharp -	14	Helper-up -	Inquest attended. He exchanged places with a driver contrary to orders, and when riding on the limmers his head was caught against the roof.	–	–	–	1	–	1
66	Nov. 5 —	3	St. Helens -	Cumberland -	St. Helen's Colliery and Brick Works Co., Ld.	John Daglish -	20	Stoneman -	Inquiries made. The evidence given at the inquest showed that the deceased strained himself when lifting a stone, and that his death was due to this cause.	–	–	–	1	–	1
67	Nov. 16 10.20a.m.	1	North Seaton	Northumberland	Cowpen Coal Co., Ld.	Edward Wilson	23	Hewer -	Inspection made and inquest attended. Deceased, when going to his work, was killed by a fall of stone, which occurred on a main road. Many men had passed this place previously without observing any danger.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

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68	Nov. 19 5 a.m.	5	Water Gate, No. 2.	Cumberland -	Flimby and Broughton Moor Coal and Fire-brick Co., Ld.	Robert Wilkin -	33	Hewer -	Inspection made and inquest attended. This was a case where, when engaged at stone-work, the deceased was caught by a fall of stone, although he and his mate considered the place safe.	–	1	–	–	–	1
69	Nov. 23 11.30p.m.	2	East Tanfield	Durham - -	James Joicey & Co., Ld.	Wm. Stephens -	43	Deputy -	Inspection made and inquest attended. Deceased and another deputy were engaged drawing timber out of an old place, and when the work was nearly finished a fall of roof occurred, canting out some of the remaining props.	–	1	–	–	–	1
70	Nov. 26 2.45 a.m.	3	Boldon -	Ditto - -	Harton Coal Co., Ld.	Edward Noble -	67	Shifter -	Inquest attended. Deceased got a blow on the arm from a falling prop, but finished his shift. He was afterwards unable to work, and eventually died from blood poisoning.	–	–	–	1	–	1
71	Nov. 28 11.20a.m.	6	Croft - -	Cumberland -	Whitehaven Colliery Co.	John Graham -	13	Screen lad -	Inspection made and inquest attended. It is supposed that the deceased was crossing over the railway and got crushed between the trucks. No one appears to have seen the accident.	–	–	–	–	1	1
72	Dec. 3 10.20a.m.	5	West Shield Row.	Durham - -	Owners of South Derwent Colliery.	Wm. H. Pattison	19	Putter -	Inspection made and inquest attended. Fall of stone. The roof is good, and as a rule little timber is required. The stone fell at the junction of two roads.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

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73	Dec, 4 9.0 a.m.	3	Croft - -	Cumberland -	Whitehaven Colliery Co.	Wiliam Kinrade	44	Hewer -	Inspection made and inquest attended. A fall of stone took place near the goaf edge where deceased was working and caught his arm, and he died afterwards from the injuries received.	–	1	–	–	–	1
74	Dec. 13 6.25a.m.	1	Washington -	Durham - -	Washington Coal Co.	R. W. Carlton -	14	Screener -	Inspection made and inquest attended. In attempting to cross the railway when some waggons were being shunted, he was run over.	–	–	–	–	1	1
75	Dec. 21 4.0 p.m.	7	Bedlington (Doctor).	Northumberland	Bedlington Coal Co., Ld.	John Marley -	60	Back overman.	Inspection made and inquest attended. Fall of stone. Some tubs ran amain owing to the welding of a link opening out. They smashed the runaway switch and jumped the rails at the points, knocking out the props from under the baulks at the junction of the full and empty roads. Deceased, after examining the roof, which he thought shaken, but good enough to work under for the time being, started to get the tubs on the road, when the fall came away from a slip and buried him.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

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76	Dec. 26 1.30 p.m.	2	Seaton Delaval	Northumberland	Seaton Delaval Coal Co.	John Beckwith	36	Sinker	Inspection made and inquest attended. Accident caused by blown-out shot. It appeared that the hole had been drilled in the "fast," and had been twice fired, on the first occasion blowing the front of the hole off, but on the second doing no work at all.	–	–	–	1	–	1
77	Dec. 26 9.0 a.m.	3	East Castle	Durham	East Pontop Coal Co., Ld.	George Dent	37	Waggonman	Inspection made and inquest attended. Deceased had hooked his horses on and got on the buffer, and then discovered that the hook had not got a good hold. He leaned forward to press against it with his hand to keep it in position, when it slipped off the crook, and he fell forward off the buffer in front of the waggon wheels.	–	–	–	–	1	1

METALLIFEROUS MINES REGULATION ACT, 1872.

FATAL ACCIDENTS, and LOSS OF LIFE arising therefrom, in the NEWCASTLE DISTRICT, 1894.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Reputed Age.	Occupation.	Cause of Death, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1	1893. Nov. 30 8.0 a.m.	2	Winder Gill -	Winder -	Winder Gill Iron Ore Co.	Michael Connor	53	Ore picker	Inquiries made and inquest attended. Deceased, when trying to stop a waggon and standing on the brake, was jammed between the top of the waggon and a post. He died on the 8th March 1894.	–	–	–	–	1	1
2	1894. Jan. 20 1.0 p.m.	7	High House - No. 5 Pit.	Frizington -	Fletcher's High House Mining Co.	Charles Vodden	58	Miner -	Inspection made and inquest attended. An accident of a very simple character. He was seated on a plank, boring, with his feet resting on loose ore. He stood up for some purpose, and the plank was displaced. On attempting to sit down again he fell backwards, and rolled about 6 feet down a bank of ore. He died the following day.	–	–	–	1	–	1
3	Mar. 2 8.30 a.m.	3	Postlethwaite's Moor Row, No. 5 Pit.	Moor Row -	Miles Postlethwaite -	James Fisher -	55	Ditto -	Inspection made and inquest attended. Fall of stone from a damp parting. The place had been inspected by an official previous to the men commencing work, and the men themselves had examined this particular lump, and considered it sound. He died on the 2nd April.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Reputed Age.	Occupation.	Cause of Death, and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
4	June 30 10.30a.m.	5	Winder Gill -	Winder -	Winder Gill Iron Ore Co.	William Ray -	27	Trailer -	Inspection made and inquest attended. Fall down a staple pit. The front of this shaft was properly fenced, but the back was quite unprotected. The trailers were, it transpired, accustomed to lunch here, and in going round for this purpose, deceased slipped and fell down the pit.	–	–	1	–	–	1
5	Sept. 1 11.0 a.m.	5	Postlethwaite's Eskett.	Winder -	Postlethwaite's Eskett Mining Co.	Thomas Kerving	60	Miner -	Inspection made and inquest attended. A piece of tough shale fell from the side without warning, and rolled over on deceased, who was filling ore. The working place had been inspected by two different officials between the men leaving the previous day and their return on the morning of the accident.	–	1	–	–	–	1
6	Sept. 24 11.30a.m.	6	Montreal - No. 5 Pit.	Cleator Moor	John Stirling -	Michael Scott - Bernard Murphy	55 45	Ditto - Ditto -	Inspection made and inquest attended. A temporary staging had been placed across the top of the shaft to facilitate repairs, and the accident was caused by the engine-man attempting to raise the cage to the pit top, instead of stopping at the surface. (*See* Report.)	–	–	2	–	–	2

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Reputed Age.	Occupation.	Cause of Death and Remarks.	No. of Lives lost. Explosions of Fire-damp.	Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
7	Oct. 9 9.30 a.m.	4	Winder No. 20 Pit.	Winder	Parkside Mining Co.	Tom Adams	45	Deputy	Inspection made and inquest attended. He was going down on the cage alone, having previously instructed the engineman to stop at the "eye." This was reached in safety, and a few minutes later the signal to "lower, men on" was received. He was found lying across the cage, on its arrival at the bottom, quite dead, his neck being dislocated.	–	–	1	–	–	1
8	Nov. 17 10.30a.m.	5	Birks No. 7 Pit.	Frizington	Frizington Mining Co., Ld.	David Harrison David Crone Thomas Toy	35 15 15	Miner Miner's Labourer. Ditto.	Inspection made and inquest attended. Irruption of water from the workings of an old adjoining pit. (*See* Report.)	–	–	–	3	–	3
9	Dec. 19 8.30 a.m.	2	Southam	Bigrigg	Southam Hematite Co., Ld.	Dixon Nulty William Wilson	45 35	Joiner. Labourer	Inspection made and inquest attended. This accident was the result of a mistake on the part of the engineman, who, when he should have lowered the deceased, raised them until they were crushed against the crown-trees. (*See* Report.)	–	–	2	–	–	2

Reports of Assistant Inspectors.

10 Rosebank, Whitehaven,
12th February 1895.

SIR,

I HAVE the honour to report, in pursuance of section 20 of the Metalliferous Mines Regulation Act, 1872, that during the past year I exercised the duty of Inspector of Mines in the Newcastle-on-Tyne district; and that in doing so I acted under the directions of Mr. J. L. Hedley, the Inspector in charge of the district.

I have, &c.,
R. P. W. OSWALD.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Office, Whitehall, London.

---

30 Eldon Street, Newcastle-on-Tyne,
6th February 1895.

SIR,

I HAVE the honour to report that during the past year I have exercised the duties of Inspector of Mines in the Newcastle district, and that in doing so I acted under the directions of Mr. John L. Hedley, the Inspector in charge.

I have, &c.,
G. F. BELL.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Whitehall, S.W.

Cleator Moor,
8th February 1895.

SIR,

I HAVE the honour to report, in pursuance of section 20 of the Metalliferous Mines Regulation Act, 1872, that after my appointment on the 4th August 1894, I exercised the duties of Inspector of Mines in the Newcastle district, and that in doing so I acted under the directions of the Inspector in charge, Mr. John L. Hedley.

I have, &c.,
WILLIAM LECK.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Office, Whitehall, S.W.

REPORT

OF

HENRY HALL, Esq., H.M. INSPECTOR OF MINES

FOR THE

LIVERPOOL DISTRICT (No. 7),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887, the Metalliferous Mines Regulation Acts, 1872 and 1875, and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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1895.

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Mr. Hall's Report.

Report on the Inspection of Mines in the West Lancashire and North Wales Inspection District, from the 31st December 1891 to the 31st December 1893.—By Henry Hall, Esq.

Sir, Rainhill, 25 February 1895.

As Inspector of Mines for the Liverpool District, comprising West Lancashire and North Wales, I have the honour to submit a Report for the year ending the 31st December 1894.

The past year has been a record one, both as regards production and accidents. A greater quantity of minerals have been raised, and there have been fewer fatal accidents than in any previous year. It has also been a record year as regards firedamp explosions, no fatal case having occurred within this inspection district during 1894; indeed only 4 deaths from this cause have been recorded during the last five years, or rather less than one per annum, a result reflecting the greatest possible credit upon the Lancashire and North Wales colliery officials. I believe this high standard can be maintained by absolutely excluding gunpowder and open lights from the mines, by blasting as seldom as possible, and in all cases using the safest high explosive fired by electricity, and by withdrawing the workpeople when shots have to be fired in main air currents, and keeping all main roads damp and clear of dust.

The loss of life in and about the mines of this inspection district amounted to 72 persons, being 3 fewer than the previous year, but in that year there was a strike lasting 16 weeks, so that for a comparison we must take the average loss of life since 1873 (*see* Table, page 6), which amounts to 113 per annum, whilst the fatalities in 1894 are only 72, or nearly 35 per cent. more favourable. The causes of accident have, as usual, been very various, but falls of roof and coal account for nearly 60 per cent. of the death roll.

Two hundred and eighty-three separate accidents have been reported to me during the year, resulting in the deaths of 72 persons and injuries more or less serious to 235 others. Of these accidents, 46 fatal and 138 non-fatal occurred in the West Lancashire division and 24 fatal and 75 non-fatal in North Wales; the loss of life from these accidents being 46 in the former division and in the latter 26, or a total of 72 persons. In addition to these accidents there has been a large number of slight injuries, entailing loss of work and wages to the individuals, but not of such a serious nature as to require notice of them to be given under the Act of Parliament. It is often difficult to decide whether an injury is of such a character as the Act requires to be reported, and I have noticed that it is becoming the custom to take the doctor's opinion as to whether a case is likely to prove fatal before making the report. This course is, I think, hardly what the Act of Parliament contemplated: an accident may be very serious, such as a broken leg or arm, without greatly endangering life, such accidents as these, also crushes, should always be reported. Of course, it is quite clear that if every trifling accident be reported, they will be counted by thousands in place of hundreds, for by reference to the Report of the Lancashire and Cheshire Miners' Permanent Relief Society for the year 1894, I find that with a membership of 55,294 persons, 9,028 accidents were reported and claims made against the Society during the year 1894. This membership is less than the number of persons employed in this inspection district alone, so that it is quite clear that if all accidents entailing seven days' idleness have to be reported it will mean a great deal more than probably those who suggest it have taken into account.

The quantity of mineral raised during the year 1894 amounted to 15,822,946 statute tons, a larger production than has ever been recorded for this district. This total quantity of mineral was made up of 15,747,413 tons of coal, 73,918 tons of fireclay, 1,374 tons of oil shale, and 241 tons of ironstone. Of the coal raised, West Lancashire contributed 12,596,648, Denbighshire 2,355,347, and Flintshire 795,418 tons. The demand during the earlier months of the year was fairly active, but later it fell away, and many of the collieries were unable to secure sufficient orders to keep their hands regularly employed. This slackness in demand applied more especially to small coal for steam and manufacturing purposes, owing to the stoppage or partial stoppage of large works in the neighbourhood. Under these circumstances, it is somewhat surprising to find the production of 1894 reaching nearly 16 million tons and heading the list for past years. There are at present two or three new mines in the course of being opened, whilst others are drawing to a close; the district is not one capable of much larger development.

The number of persons employed in and about the collieries in this district during the past year has been 57,658 as against 57,024 in the previous year, an increase of 634. West Lancashire employed 46,022, Denbighshire 9,247, and Flintshire 3,389 persons; West Lancashire raising 343 tons of mineral, and the two latter counties together 310 tons for each person employed underground; or, if we take into account the persons employed on the surface as well, then West Lancashire has 280 and North Wales 254 tons per man. The tonnage raised per man during the year is, of course, affected by the number of days the collieries have worked, and does not represent what each individual workman is capable of doing. The figures for the two divisions, Lancashire and North Wales, approach each other more nearly this year than usual, but the former still shows a substantial amount per head more than Wales.

Of the persons employed, 47,108 were engaged underground and 10,550 on the surface; of these, 3,780 were boys between 12 and 16 years of age, and there were 1,812 women and girls employed on the surface, of whom 205 were between 13 and 16 years of age.

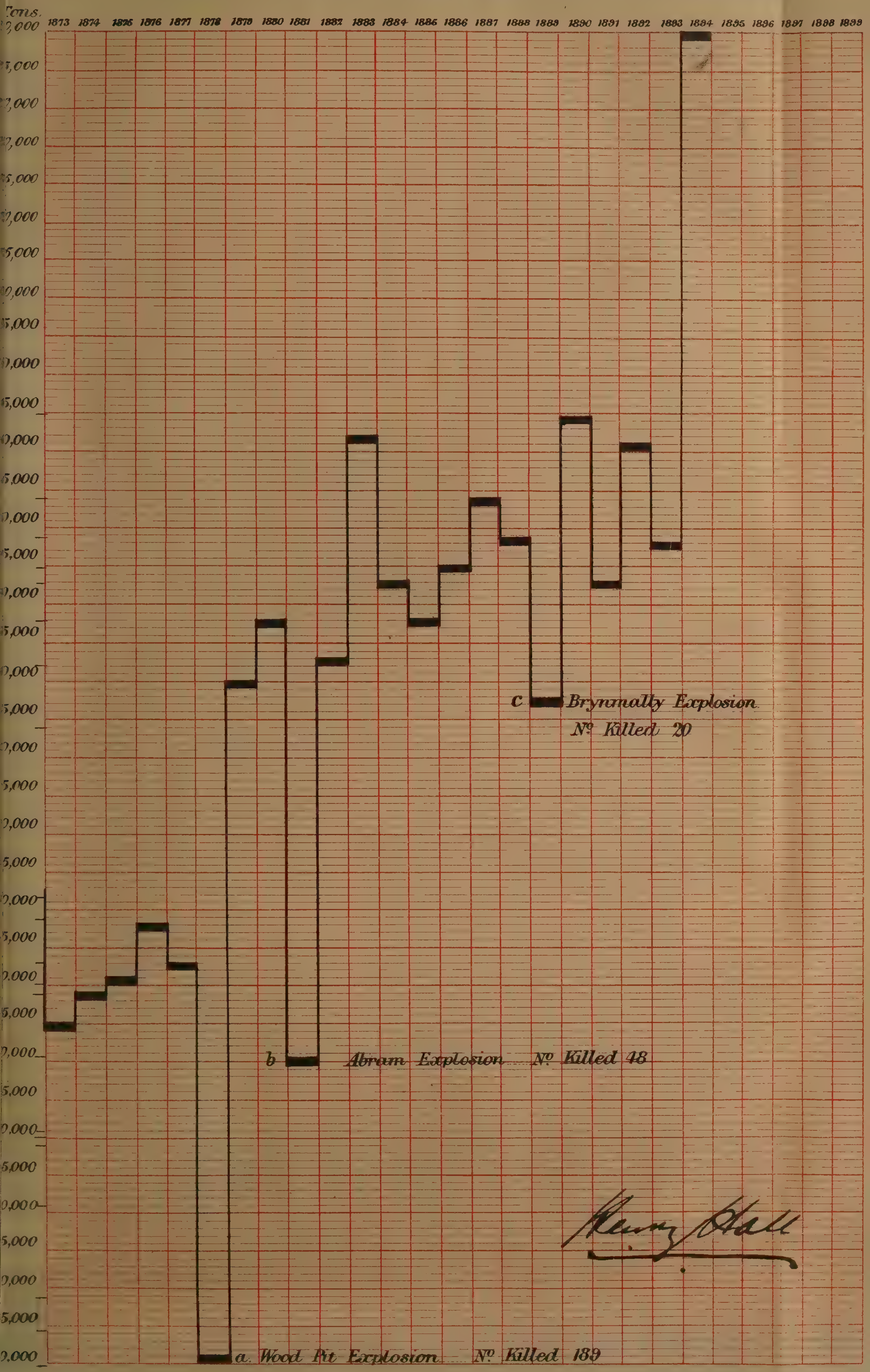
Wages are considered high for coal getters, but the total earnings are discounted by irregular employment, and in some cases the pits are so crowded that individual earnings are reduced. A reduction of 10 per cent. in wages came into operation in August 1894, and by arrangement this rate will be continued during the present year. The greatest sufferers when the pits work short time are the surface hands, whose wages are comparatively low. At the moment of writing there are great complaints of want of employment in the St. Helen's neighbourhood among glass and chemical workers, but the collieries are working more regularly.

The average selling price of coal *at the pits* has been 6*s*. 6*d*. for West Lancashire and about 6*s*. 5*d*. for North Wales. These figures compare with 7*s*. 3*d*. and 6*s*. 10*d*. for 1893, but they must not be taken as absolutely accurate, no returns of prices being required by Act of Parliament; they are deduced from the sales at a typical colliery, and from what I hear of prices in passing to and fro.

These prices must be unremunerative at a great many of the collieries where only a second-class coal is raised. Probably the selling price and the cost approach each other within 3*d*. per ton, and frequently no doubt the end of the month reveals a loss per ton of this amount.

The following tabular statement shows the proportion of separate fatal accidents and lives lost to the number of persons employed and to the quantity of minerals raised, and also the death rate from accident per 1,000 persons employed, for this year and for each previous year since the passing of the Coal Mines Regulation Act, 1872:—

Diagram Showing the Quantity of Mineral Raised Per Life Lost in Lancashire and North Wales, from 1873 to 1894 Inclusive.



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	Persons employed in and about the Mines.	Tons of Mineral wrought.					Accidents.		Persons employed.		Mineral raised in Statute Tons.		Number of Mines.	Death Rate from Accidents per 1,000 persons employed.
—		Coal.	Fire-clay.	Iron-stone.	Shale.	Total.	Separate fatal.	Lives lost.	Per separate fatal accident.	Per Life lost.	Per separate fatal accident.	Per Life lost.		
West Lancashire -	45,022	12,596,648	6,081	151	—	12,602,880	46	46	978	978	273,975	273,975	168	
North Wales -	12,636	3,150,765	67,837	90	1,374	3,220,066	24	26	526	486	134,169	123,848	68	
Totals and averages, 1894.	57,658	15,747,413	73,918	241	1,374	15,822,946	70	72	823	800	226,042	219,763	236	1·248
Do. 1893	57,024	10,511,755	82,236	—	1,754	10,595,745	72	75	792	760	147,163	141,276	239	1·315
Do. 1892	55,215	14,872,278	72,669	92	1,872	14,946,911	73	93	756	593	204,752	160,719	238	1·682
Do. 1891	53,587	15,039,214	75,628	—	1,904	15,116,756	99	106	541	505	152,694	142,610	240	1·978
Do. 1890	50,796	14,491,191	67,437	474	3,438	14,562,540	88	89	577	570	165,483	163,624	236	1·751
Do. 1889	45,655	14,338,145	57,050	231	2,204	14,397,630	89	114	513	400	161,771	126,295	225	2·496
Do. 1888	44,262	13,835,867	60,376	651	2,308	13,899,202	86	94	515	471	161,618	147,863	211	2·123
Do. 1887	43,667	13,693,321	67,143	2,713	14	13,763,191	83	90	526	485	165,821	152,924	211	2·061
Do. 1886	42,245	13,419,989	49,137	2,866	124	13,472,116	94	94	449	449	143,320	143,320	220	2·225
Do. 1885	41,565	13,176,944	59,047	259	2,098	13,240,683	96	97	433	428	137,923	136,502	225	2·333
Do. 1884	41,905	12,799,199	42,115	4,470	11,227	12,857,011	89	91	471	460	144,461	141,286	238	2·171
Do. 1883	41,720	13,304,307	34,979	6,230	8,546	13,354,062	82	83	509	502	162,854	160,892	236	1·989
Do. 1882	40,495	12,452,413	45,165	15,514	9,073	12,522,165	93	95	435	426	134,646	131,812	240	2·345
Do. 1881	39,630	11,843,685	55,589	23,569	10,727	11,933,570	101	151	392	262	118,154	79,030	242	3·810
Do. 1880	39,454	12,029,751	54,433	35,746	11,183	12,131,113	78	89	506	443	155,527	136,304	242	2·256
Do. 1879	39,458	11,783,724	47,711	28,414	15,961	11,875,810	87	97	453	407	136,503	122,431	242	2·458
Do. 1878	39,024	11,651,797	88,454	19,574	9,741	11,769,566	102	304	382	128	115,388	38,716	263	7·790
Do. 1877	40,342	11,426,745	70,334	23,811	957	11,521,847	84	127	480	318	137,165	90,723	301	3·148
Do. 1876	42,174	11,509,339	54,171	22,204	1,900	11,587,614	115	121	366	348	100,762	95,765	312	2·869
Do. 1875	45,136	11,398,032	40,430	20,151	2,352	11,460,965	111	129	407	349	103,252	88,845	313	2·858
Do. 1874	43,658	9,875,762	71,951	29,169	—	9,976,882	95	115	460	380	105,020	86,755	305	2·634
Do. 1873	42,300	10,288,583	41,121	46,896	—	10,376,600	101	125	418	338	102,738	83,012	278	2·955

An examination of this table will show that the year 1894 has been much more satisfactory than any previous year, the number of tons of mineral raised per life lost being 219,763, whilst the average for the Kingdom generally has been 176,975. The production of the district has been greater than in any previous year, whilst for the Kingdom generally it has amounted to 199,451,018 tons of minerals, a larger production than has ever been recorded.

The hours of the "shift" in which the fatal accidents have happened are in this district as follows:—1st hour 6, 2nd hour 5, 3rd hour 5, 4th hour 6, 5th hour 15, 6th hour 4, 7th hour 5, 8th hour 8, 9th hour 7, 10th hour 6, 11th hour 2, 12th hour 1; whilst for the Kingdom generally the most fatal hours have been the 2nd, 3rd, and 5th.

The following statement shows the various kinds of accidents, and the number of deaths caused thereby, during each year since the passing of the Coal Mines Regulation Act, 1872 :—

		Falls in Mine.			In Shafts.									Miscellaneous Underground.									On Surface.				
	Explosions.	Falls of Side.	Falls of Roof.	Total Falls in Mine.	Overwinding.	Ropes and Chains breaking.	Whilst ascending or descending by Machinery.	Falling into Shaft from surface.	Things falling from surface.	Falling from part way down.	Things falling from part way down.	Miscellaneous in Shafts.	Total in Shafts.	Explosions of Gunpowder, &c.	Suffocation by Gases.	Irruptions of Water.	Falling into Water.	On Inclined Planes.	By Trams and Tubs.	By Machinery underground.	Sundries underground.	Total Miscellaneous underground.	By Machinery on surface.	Boilers bursting.	Miscellaneous on surface, including Railway Sidings.	Total on surface.	Gross Total.
West Lancashire	—	6	24	30	—	—	1	—	1	2	—	1	5	1	—	—	—	2	—	1	1	5	1	—	5	6	46
North Wales	—	7	6	13	—	—	2	—	—	—	—	—	2	—	2	—	—	2	2	—	2	8	—	—	3	3	26
Total in 1894	—	13	30	43	—	—	3	—	1	2	—	1	7	1	2	—	—	4	2	1	3	13	1	—	8	9	72
Do. 1893		4	37	41	—	—	—	—	—	2	3	2	7	—	1	—	—	5	5	1	2	14	—	—	12	12	75
Do. 1892	—	9	31	40	—	—	4	1	—	—	1	—	6	—	19	1	—	6	9	—	4	39	2	1	5	8	93
Do. 1891	2	9	51	60	—	—	5	—	2	3	1	2	13	3	1	—	—	5	8	—	3	20	1	—	10	11	106
Do. 1890	1	12	43	55	—	—	2	—	1	2	1	—	6	1	1	—	—	5	6	—	3	16	—	—	11	11	89
Do. 1889	22	6	49	55	—	—	2	2	—	1	1	1	7	—	3	—	—	8	9	—	5	23	1	—	6	7	114
Do. 1888	1	10	42	52	—	—	—	1	1	11	1	1	15	2	—	—	—	4	8	—	6	20	—	—	6	6	94
Do. 1887	6	9	47	56	2	—	—	1	—	5	1	—	9	1	—	—	—	5	4	1	—	11	—	—	8	8	90
Do. 1886	1	10	43	53	—	—	2	1	—	2	—	—	5	1	—	—	—	8	7	—	4	20	—	—	15	15	94
Do. 1885	4	10	47	57	—	—	2	—	—	1	—	1	6	—	—	—	—	3	10	1	4	18	1	—	11	12	97
Do. 1884	4	10	50	60	1	—	—	—	—	1	—	—	2	2	2	—	—	6	3	—	—	13	3	—	9	12	91
Do. 1883	3	8	42	50	—	—	1	—	1	2	—	2	6	—	—	—	—	7	6	1	2	16	—	—	8	8	83
Do. 1882	3	10	26	36	—	—	2	—	—	4	3	3	12	1	—	1	—		17	—	4	31	1	—	12	13	95
Do. 1881	55	11	47	58	—	—	3	1	—	2	—	3	9	—	1	—	—	4	7	2	3	17	—	—	12	12	151
Do. 1880	10	5	38	43	—	—	4	1	—	1	1	3	10	—	—	—	—	6	7	—	4	17	—	—	9	9	89
Do. 1879	5	11	36	47	7	—	4	1	1	2	—	—	15	1	2	—	—	5	7	1	—	16	—	—	14	14	97
Do. 1878	204	11	43	54	—	1	2	2	—	4	—	—	9	2	1	—	1	4	9	1	4	22	2	1	12	15	304
Do. 1877	40	8	39	47	3	—	1	3	—	6	3	1	17	1	—	—	—	3	5	—	2	11	4	—	8	12	127
Do. 1876	14	17	44	61	—	1	4	1	2	4	3	3	18	4	—	—	—	5	4	—	3	16	3	—	9	12	121
Do. 1875	6	19	43	62	2	—	8	2	—	5	6	6	29	—	1	—	—	1	8	3	1	14	2	—	16	18	129
Do. 1874	23	3	38	41	3	1	1	3	—	6	2	5	21	2	4	1	—	2	5	—	2	16	1	1	12	14	115
Do. 1873	31	10	32	42	—	1	2	2	—	10	5	2	22	6	—	—	1	8	3	1	2	21	—	—	9	9	125

We see from the above Table that "Falls of roof and side," as usual, account for by far the greatest number of accidents, amounting this year to 60 per cent. of the whole. There can be no doubt that this class of accident can by stricter and more definite rules be made less frequent. The rule unanimously recommended by the inspectors for adoption throughout the kingdom and to be enforced by legislation is in the following words :—"Every certificated manager of a mine shall specify the maximum distance "that props or supports may be fixed in every coal seam under his charge." The reasons for this change have been set forth again and again, and may be summed up in the statement that under the present law the responsibility for the security of the roof in the working places is cast entirely upon the workman himself, whether he is

capable or unexperienced, careful or careless, he has to be the judge to a very large extent of what supports should be put up to keep the roof from falling on him, and whilst this is so it is very difficult to convict him of carelessness. There can be no question that the definite rule requiring sprags to be set at fixed distances whilst undercutting coal has saved many lives, and a similar *definite* rule is wanted with regard to the roof, so that when an official visits a workman's place and finds the rule being neglected, he can act with authority; as things are at present the official's interference either takes the form of an acrimonious argument with the workman as to whether certain supports *are needed or not*, or he contents himself with amiably suggesting to the workman that he must take care of himself, and leaves him to do it as best he can.

Some practical remarks on this subject appeared in a leading article in the "Wigan Observer" a week or two ago as follows:—

"Comparatively little attention has been given to this class of accidents, owing, no doubt, to the fact that public feeling is not so much touched by a large number of accidents happening singly and spread over a large space of time, as by a few catastrophes, which result each in a large loss of life. But there are indications that the subject will soon receive the attention it merits, and as Mr. Asquith intimated in the speech already referred to, that the new Mines Bill will strengthen the existing law in some directions, it is likely that some precautions will be enforced against the danger of the roof and sides. The very least an Act of Parliament can do in this matter is to increase the powers of employers and inspectors, so as to ensure that there will be no gross carelessness on the part of those whose duty it is to fix the timber. But even an Act of Parliament cannot supply the great body of miners with the skill and arouse in their minds the vigilance which must in the long run be the best safeguard against dangers of this kind. The young miner, owing to lack of experience, exuberance of animal spirits, and a desire to produce a large quantity of coal, is apt to entirely ignore the dangers of the roof and sides. Even experienced miners become careless owing to a long immunity from accidents, itself the result of skill and carefulness. And as no special attention has been given to these accidents, much less is known about the dangers of the roof and sides than would otherwise be known. A large stone falls, causing the death of a man; an examination is made, disclosing the existence of one or more slips, and the affair is regarded as an accident, which, in the present state of knowledge of the subject, it certainly is. But the same time and energy given to the study of these accidents that have been given to the study of explosions would produce similar results, and the accident which to-day is regarded as unpreventible would, in the course of a year or two, be regarded as quite preventible. What is wanted, then, in addition, of course, to an Act of Parliament conferring greater powers on inspectors and managers, is that all the classes connected with mining should unite in an effort to solve this problem. The mere concentration of attention upon the problem would have a good effect by making the miners feel that accidents due to sheer carelessness, instead of arousing sympathy in the public mind, would only elicit expressions of censure. And the interest taken in every accident would result in an increase of knowledge which would be used to prevent accidents of the same kind. Thus step by step this problem would be solved; thus year by year the number of accidents of this kind would diminish; and thus would the country witness another great triumph of patient investigation and untiring effort."

A complete list of the 70 separate fatal accidents is appended to this report, together with a summary of the circumstances under which each accident happened, and also the hour of the "shift" in which each occurred. The circumstances are very various, and can only be met by the constant exercise of precaution on the part of officials and workmen. It is quite clear that any exposed machinery, any want of space for the passage of trams, any neglect of proper examination of the workings or apparatus of the mine, must eventually result in accident. On the surface, the movement of railway wagons is a fruitful source of accident, and this can only be obviated by taking care that the persons working about the screens, and who are constantly exposed to this danger, should be duly warned when shunting operations are about to take place, and all coupling or uncoupling of wagons where a locomotive is attached should be done with a coupling pole; it is not enough to see that a coupling pole is carried on the locomotive. A manager who wishes to prevent accident should compel its use on all occasions.

In view of new legislation affecting coal mines, I made the following observations in my report for the year 1893:—

The three departments of mining which call most urgently for attention are timbering, blasting, and lighting. To these three have to be debited the great bulk of

colliery fatalities in the past, and this will continue to be the case unless some decided steps are taken. I have had the honour frequently to report to you as to the dangers of blasting with gunpowder, and to suggest its total prohibition. The time has now arrived when this course might be adopted without any risk of injury to the coal industry, as several explosives now in the market have proved themselves equal, or even superior, to gunpowder for mining, whilst by their use the dangers incident to blasting almost entirely disappear. These safer explosives have been adopted already by the best firms in Lancashire, Durham, and elsewhere, and compulsion is only needed to compel the laggards to adopt them likewise.

The question of timbering, which is responsible for over 50 per cent. of mine accidents, is also urgent. The statistics referring to this class of fatality do not exhibit the constantly improving ratio since the commencement of mining inspection which is so apparent with regard to most other kinds of accident. With a view to diminish the risks from falls of roofs in the mines, what is called "systematic timbering" has been prominently brought under the notice of the employers, and has been adopted to some extent, and I feel convinced the compulsory enforcement of systematic timbering would effect a great saving of life. A rule with this object in view has already been submitted to you by the mine inspectors at their annual meeting.

The method of lighting the mines has received little attention in the legislation of the last 20 years, although it is one eminently capable of great improvement. It is still to a great extent optional whether candles or safety lamps shall be used; to enforce the use of safety lamps on an unwilling employer means a long and costly arbitration, and even that still more deadly arrangement of mixed lights has only been partially dealt with. All the best mining authorities made up their minds on this subject many years ago, and whenever this is the case legislation should quickly follow. It is extraordinary how otherwise conscientious managers can allow candles or mixed lights to continue to be used in mines liable to firedamp—thus, as it were, courting disaster. With the view of bringing the subject of lamps more prominently forward and showing its importance, I submit the following statistics of deaths from firedamp explosions, and their causes, during the last 21 years. The collection of these figures has involved the examination of the whole of the mining reports for the kingdom during that period. It is sometimes said that statistics can be made to prove almost anything, but so far as the figures in the column headed "Candles and mixed lights" are concerned, I am satisfied of their absolute correctness. The figures in the columns headed "Blasting with gunpowder" and "Defective lamps or flame passing gauze" may be open to some correction in consequence of the reports dealing with the circumstances of individual accidents leaving the origin of the explosion in some doubt, but any excess in numbers in the one column would only be transposed to the other. Of all the causes to which the explosions are attributed, that of flame passing the gauze of a safety lamp has the least positive evidence to support it.

SUMMARY TABLE of DEATHS from EXPLOSIONS of FIREDAMP and their CAUSES, also of DEATHS from ACCIDENTAL IGNITIONS of GUNPOWDER in MINES from 1873 to 1893, both inclusive.

Inspection Districts.	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Cause not stated.	Accidental Ignitions of Gunpowder.	Total Deaths.
Newcastle - -	24	90	4	1	1	39	159
Durham - -	66	269	—	—	2	47	384
Manchester -	297	11	108	—	—	24	440
Liverpool - -	52	104	267	2	2	27	454
Yorkshire - -	286	179	27	5	2	20	519
Midland - -	70	—	1	—	28	28	127
North Stafford -	135	186	4	7	112	24	468
South Stafford -	81	4	—	—	4	40	129
South-western -	293	152	271	3	21	42	762
South Wales - -	116	249	118	2	93	39	617
East Scotland -	59	311	1	—	1	36	408
West Scotland -	82	7	—	—	—	41	130
	1,561	1,562	801	20	266	387	4,597

The totals under the various headings in the summary table speak for themselves, and their significance cannot be increased by any words of mine. The aggregate total under the heading of candles or mixed lights shows a loss of 1,561 lives, a result simply appalling when we remember that a remedy has been all the time within easy reach.

The second column in the same table shows the lives lost through blasting with gunpowder and to these must be added those due to accidental ignitions of gunpowder shown in the sixth column; these latter are accidents in the *handling* of gunpowder charges, and they are most frequent in mines worked with open lights. We thus have a total of deaths due to gunpowder amounting to 1949. It would not, perhaps, be quite true to say of this class of accident that a remedy has always been at hand, but that is so now by means of the high explosives such as roburite, ammonite, &c., and whether notwithstanding, gunpowder will continue to be used for the next 20 years, as has been the case with candles, depends upon the character and effectiveness of legislation.

In the year 1893 which has now been added to the above list, the whole of the explosions of firedamp causing the death of 170 persons have been due either to open lights or gunpowder.

DEATHS caused by EXPLOSIONS of FIREDAMP and IGNITIONS of GUNPOWDER from 1873 to 1893 inclusive.

Inspection District.	1873.						1874.						1875.						1876.						1877.						Remarks.
	Candles or Mixed Lights.	Blasting with Gun-powder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gun-powder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gun-powder.	Defective Lamps or Flame passing Gauze.	Ignited by Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gun-powder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gun-powder.	Defective Lamp or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	
Newcastle	—	—	—	—	5	—	—	—	—	—	5	—	4	—	—	—	3	—	2	—	—	1	1	—	—	1	—	—	1	—	
Durham	1	—	—	—	1	—	1	—	—	—	3	1	1	—	—	—	3	—	4	1	—	—	1	1	2	—	—	—	3	—	
Manchester	1	—	1	—	1	—	6	—	—	—	1	—	2	—	1	—	3	—	5	—	—	—	—	—	33	9	—	—	3	—	
Liverpool	10	19	—	2	6	—	8	15	—	—	2	—	2	3	1	—	—	—	9	4	1	—	4	—	3	7	—	—	1	—	
Yorkshire	5	1	—	4	—	2	23	—	1	—	—	—	18	143	—	1	4	—	3	—	—	—	—	—	1	—	2	—	—	—	
Midland	2	—	1	—	—	1	3	—	—	—	2	—	1	—	—	—	2	—	6	—	—	—	2	—	1	—	—	—	1	1	
N. Stafford	—	20	—	—	1	5	78	—	—	—	4	—	—	43	1	—	—	2	—	11	—	—	—	—	2	—	—	—	2	—	
S. Stafford	2	—	—	—	6	2	2	—	—	—	4	—	7	—	—	—	2	—	4	—	—	—	—	1	11	—	—	—	1	—	
South-western	6	—	—	—	3	1	—	—	—	—	6	1	2	26	—	—	—	4	29	—	—	—	2	—	2	—	—	—	—	—	
S. Wales	7	—	—	—	1	4	6	5	—	—	3	—	18	—	2	—	2	—	2	—	1	—	—	1	22	—	1	—	2	—	
E. Scotland	—	—	—	—	1	—	7	—	—	—	—	—	1	1	—	—	—	—	2	—	—	—	—	—	5	207*	—	—	—	—	* Not conclusive.
W. Scotland	3	—	—	—	5	—	3	—	—	—	1	—	5	—	—	—	1	—	7	—	—	—	2	—	5	—	—	—	—	—	
	1878.						1879.						1880.						1881.						1882.						
Newcastle	1	—	—	—	1	—	1	—	—	—	3	—	1	—	—	—	—	—	—	—	—	—	1	—	2	—	4	—	—	—	
Durham	2	2	—	—	1	—	—	—	—	—	—	—	—	164	—	—	4	—	—	—	—	—	3	—	53	74*	—	—	—	—	* Not conclusive.
Manchester	45	—	—	—	—	—	10	—	—	—	1	—	2	—	—	—	1	—	2	—	—	—	1	—	2	—	—	—	1	—	
Liverpool	2	—	195*	—	2	—	5	—	—	—	1	—	1	9	—	—	—	—	1	4	48*	—	—	—	1	—	—	—	1	2	* Not conclusive.
Yorkshire	2	2	—	—	1	—	31	—	—	—	2	—	43	4	—	—	—	—	1	—	—	—	1	—	1	7	—	—	—	—	
Midland	—	—	—	—	1	—	1	—	—	—	2	—	—	—	—	—	1	—	1	—	—	—	2	3	47	—	—	—	2	23*	* Underground fire.
N. Stafford	2	26	—	—	—	—	9	1	—	—	—	—	2	62	—	—	1	1	8	—	—	4	1	25*	2	—	—	—	2	—	* Underground fire.
S. Stafford	—	2	—	—	2	—	10	—	—	—	1	—	3	1	—	—	1	1	5	1	—	—	1	—	1	—	—	—	2	—	
South-western	—	—	268*	—	1	—	6	—	—	3	1	—	6	120*	—	—	—	—	—	—	—	—	—	—	7	4	—	—	—	—	* Not conclusive.
S. Wales	4	3	—	—	—	—	—	—	—	—	1	63	7	101	—	—	1	—	3	—	—	—	3	—	4	—	—	—	2	6*	* Underground fire.
E. Scotland	2	—	—	—	—	—	4	28	—	—	—	—	1	—	—	—	3	—	2	—	—	—	2	—	11	—	—	—	1	—	
W. Scotland	19	3	—	—	2	—	3	2	—	—	1	—	6	—	—	—	2	—	5	—	—	—	2	—	1	—	—	—	—	—	

DEATHS caused by EXPLOSIONS of FIREDAMP and IGNITIONS of GUNPOWDER from 1873 to 1893 inclusive—*continued.*

Inspection District.	1883.						1884.						1885.						1886.						1887.						1888						Remarks.
	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	
Newcastle	2	—	—	—	3	—	—	—	—	—	—	—	—	42	—	—	—	—	—	—	—	—	1	—	4	8	—	—	2	—	1	30	—	—	—	—	
Durham	—	—	—	—	7	—	—	—	—	—	3	—	—	—	—	—	1	—	—	28*	—	—	2	—	—	—	—	—	1	—	—	—	—	—	3	—	* Not conclusive.
Manchester	6	—	68	—	3	—	—	—	—	—	—	—	180	—	—	—	1	—	1	—	38	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	
Liverpool	1	2	—	—	—	—	2	—	2	—	2	—	1	3	—	—	—	—	1	—	—	—	1	—	—	6	—	—	1	—	1	—	—	—	2	—	
Yorkshire	—	—	20	—	1	—	1	—	—	—	—	—	1	—	1	—	1	—	1	22	—	—	—	—	—	—	—	—	2	—	2	—	2	—	1	—	
Midland	2	—	—	—	5	—	1	—	—	—	1	—	—	—	—	—	1	—	2	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	
N. Stafford	—	—	—	3	2	6*	2	8	—	—	1	—	1	8	—	—	—	9	—	—	—	—	—	—	1	—	3	—	4	—	—	—	—	—	—	—	* Gob fire.
S. Stafford	2	—	—	—	5	—	16	—	—	—	2	—	2	—	—	—	2	—	2	—	—	—	—	—	3	—	—	—	3	—	2	—	—	—	2	—	
South-western	9	—	—	—	—	—	2	—	—	—	1	14	3	—	—	—	1	—	19	—	3	—	1	—	1	—	—	—	—	—	—	—	—	—	1	—	
S. Wales	4	—	—	—	2	5	5	14	2	—	3	—	2	—	—	—	—	10	7	—	—	—	—	4	1	39	—	—	3	—	7	—	—	2	2	—	
E. Scotland	1	—	—	—	4	—	3	—	—	—	6	—	1	—	—	—	—	—	—	1	—	—	2	—	7	74	—	—	4	—	1	—	—	—	3	1	
W. Scotland	3	—	—	—	1	—	3	—	—	—	1	—	3	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	1	—	

Inspection District.	1889.						1890.						1891.						1892.						1893.						Remarks.
	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	Candles or Mixed Lights.	Blasting with Gunpowder.	Defective Lamps or Flame passing Gauze.	Ignited at Furnace.	Accidental Ignitions of Gunpowder.	Cause not stated.	
Newcastle	—	6	—	—	3	1	—	—	—	—	5	—	5	—	—	—	2	—	1	1	—	—	2	—	—	2	—	—	1	—	
Durham	—	—	—	—	3	—	—	—	—	—	3	—	—	—	—	—	2	—	—	—	—	—	3	—	2	—	—	—	—	—	
Manchester	—	—	—	—	1	—	2	—	—	—	—	—	—	2	—	—	2	—	—	—	—	—	3	—	—	—	—	—	—	—	
Liverpool	2	—	20	—	—	—	1	—	—	—	1	—	—	2	—	—	3	—	—	—	—	—	—	—	1	—	—	—	—	—	
Yorkshire	2	—	—	—	—	—	2	—	—	—	1	—	2	—	—	—	4	—	—	—	1	—	—	—	142	—	—	—	2	—	
Midland	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	1	—	2	—	—	—	1	—	
N. Stafford	26	—	—	—	1	64*	—	2	—	—	3	—	1	10	—	—	1	—	—	—	—	—	1	—	1	—	—	—	—	—	* Possibly gob fire.
S. Stafford	4	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	2	—	2	—	—	—	—	—	3	—	—	—	3	—	
South-western	5	—	—	—	1	—	182	—	—	—	3	—	14	—	—	—	—	—	—	—	—	—	—	1	—	2	—	—	1	—	
S. Wales	2	—	—	—	3	—	4	87	—	—	6	—	9	—	—	—	1	—	1	—	112	—	4	—	1	—	—	—	—	—	
E. Scotland	1	—	—	—	3	—	5	—	—	—	3	—	2	—	1	—	2	—	2	—	—	—	2	—	1	—	—	—	—	—	
W. Scotland	4	1	—	—	6	—	5	—	—	—	3	—	1	—	—	—	5	—	1	1	—	—	7	—	3*	—	—	—	1	—	* Opened a safety lamp.

It is the fashion to assert that mining legislation of recent years has added greatly to the cost of working coal, but this is an assumption not borne out by facts; apart from the indirect effect of the compulsory shortening of boys' working hours upon the time worked by adults, the requirements of the law for constructive work or increased supervision have not added a penny per ton to the cost of getting coal.

The suggestion of the recent Coaldust Commission that the owner of a mine of a dry and dusty nature "may be relieved of the obligation to discontinue the use of "gunpowder" if he has made provision for watering the dust, is very unsatisfactory and incompatible with the opinion the Commissioners express in their report, viz.: "We have no hesitation in expressing our opinion that a blown-out shot may under "certain conditions set up a most dangerous explosion in a mine, even where fire-damp "is not present at all or only in infinitesimal quantities." Now, it is quite clear that although efficient *provision* may be made for watering, it will frequently happen in consequence either of neglect or the failure of the system itself, that the dust may become quite dry, just as there are, from time to time, failures in ventilation in spite of the law and its safeguards. The danger from failures of ventilation is met by the compulsory use of safety lamps and in the same way the possible failures of the watering system ought to be provided against by the compulsory exclusion of all flaming explosives. Moreover the fact that already many mines *working seams of every description* are successfully carried on without the aid of gunpowder, appears to have been lost sight of, and the inconvenience and expense that its universal prohibition would entail have been greatly over estimated.

Shortly after the Albion Colliery disaster, I issued the following circular letter to the managers of mines in this district, in order to draw their special attention to the requirements of the law when blasting has to be carried out on main-air roads.

Blasting.

DEAR SIR, Rainhill, August 1894.

I DESIRE to call your special attention to the requirements of the law in regard to blasting in coal mines.

Section 49, General Rule 12 (i), requires that where shots are to be fired on a main haulage road, which is dry and dusty with dust adhering to the roof and sides, such shots shall not be fired until all persons have been removed from the seam, except the shot firers and ten other persons necessarily present to attend to ventilating furnaces, &c., unless *both* the following conditions are complied with, viz.:—

1st. The place of firing and all contiguous accessible places within a radius of twenty yards therefrom must at the time of firing be in a wet state from thorough watering or other treatment equivalent to watering in all parts where dust is lodged, whether roof, floor or sides.

2nd. The explosive used must be so used with water or other contrivance as to prevent it from inflaming gas or dust, or be of such a nature that it cannot inflame gas or dust.

A "main haulage road" means a road which has been, or for the time being is, in use for moving trams by steam or other mechanical power.

I desire also to inform you that it has come to my knowledge that in some few mines in the district "safety explosives" are used without any proper drill hole or tamping; in some cases the explosive being inserted into breaks or fissures in the strata, in others being placed loose on large stones to break them up. I need not remind you that such practices are extremely dangerous, and any explosive used in this manner is no longer a safety explosive.

Yours faithfully,
(Signed) HENRY HALL.

P.S.—After perusal, kindly hand this to your manager.

Should there be legislation compelling the use of safety explosives in place of gunpowder, it will be necessary to establish an authority, probably with experimental apparatus at its disposal, to decide which of the various so-called "safety explosives" in the market are most to be relied upon and deserving to be classed as flameless, or, at any rate, secure against the ignition of dust or firedamp when properly stemmed.

The use of electricity is extending for lighting pit banks, and also the shaft sidings underground, but a portable and satisfactory miners' electric lamp is still wanting. Such a lamp would be the greatest possible boon to the miners, and the

drawback that it would afford no test of the atmosphere of the mine would be compensated for over and over again by its great security in other directions, and I believe it would be quickly and universally adopted.

Fan ventilation, instead of the almost obsolete furnace, is becoming general. Large fans capable of driving immense quantities of air through the workings have been erected at all the more recently established collieries.

The Quarries Act came into force on the 1st January this year, which places all quarries of a greater depth than 20 feet, and all factories manufacturing bricks, pipes, &c. from the produce of such quarry, and situated within a mile of it, under the inspection of the mine inspectors, and who for these purposes have been appointed factory inspectors. I have visited most of the principal quarries in this district, and the Special Rules suggested by the Quarry Commission are being adopted.

Two hundred and eighty-three separate accidents have been reported during the year, and the necessary inquiries and inspections in these cases have occupied a large part of the time at the disposal of the Assistant Inspector and myself, but a general underground inspection of the mines in the absence of accidents has been carried out. Two hundred and sixty-six underground inspections have been made, 178 by Mr. Mathews and the rest by myself; upwards of 70 inquests have been attended, all anonymous and other complaints have had careful attention; these complaints have been less frequent than usual, the most serious being the question of "truck" at some of the North Wales pits, and which has been reported upon to you. I have had the honour to make special reports on various subjects during the year, and have attended in London and South Wales on several occasions. The correspondence has been more voluminous than usual, in consequence of the growing demand for statistics relating to mining.

In accordance with your wish I have encouraged the teaching of ambulance or first aid to the injured, and am glad to report that this subject is now being taken in hand and encouraged by the Lancashire County Council under the technical education scheme; classes have also been established by the Wigan Mining School, and they appear to be very popular, and will be continued from year to year as a part of the teaching of the school. Some of the more important collieries have established, and are supporting ambulance classes at their own cost, and make it a rule that their officials must attend and become efficient.

I believe it would be of great public benefit if ambulance were systematically taught by the technical schools throughout the country.

I have also acted as inspector under the Metalliferous Mines Act. Mr. Mathews has acted as my assistant under both Acts, and has ably and loyally performed his duties.

I am, &c.,
HENRY HALL,
Her Majesty's Inspector of Mines.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Whitehall.

LIST of FATAL EXPLOSIONS, with the NUMBER OF DEATHS caused thereby, in MR. HALL'S DISTRICT from 1873 to 1894 inclusive.

Name of Colliery.	Where situate.	No. of Deaths.	Cause of Explosion.
WEST LANCASHIRE.			
1873.			
Mesnes Colliery	Wigan	7	Open lights.
Brynn Hall "	Ditto	6	Gunpowder.
Ravenhead "	St. Helens	1	Open lights.
Ashton's Green "	Ditto	1	Ditto.
1874.			
Ince Hall Colliery	Wigan	15	Gunpowder.
Norley "	Ditto	4	Open lights.
Downall Green "	Ditto	1	Ditto.
Peasley Cross "	St. Helens	1	Man opened his safety lamp.
1875.			
Bradley Hall Colliery	Wigan	1	Open lights.
1876.			
Orrell Colliery	Ditto	2	Gunpowder.
Prospect "	Ditto	1	Fired at Davy lamp.
Moss "	Ditto	1	Gunpowder.
Brynn Hill "	Ditto	1	Ditto.
Edge Green "	Golborne	1	Opening safety lamp.
Moss "	Skelmersdale	1	Open lights.
Barley Brook "	Wigan	1	Ditto.
Swan Lane "	Ditto	1	Gunpowder.
1877.			
Pemberton Colliery	Ditto	36	Ditto.
Bradley Hall "	Ditto	1	Open lights.
1878.			
Wood Colliery	Haydock	189	Fired at Davy lamp (supposed).
Whiston "	Prescot	7	Spontaneous combustion.
1879.			
Garswood Hall Colliery	Wigan	3	Open lights.
1880.			
—	—	—	No fatal explosions.
1881.			
Abram Colliery	Wigan	48	Fired at Davy lamp (supposed).
Park Lane "	Ditto	2	Gunpowder.
Tawd Vale "	Skelmersdale	1	Ditto.
Tawd Vale "	Ditto	1	Ditto.
Sutton Heath "	St. Helens	1	Open lights.
1882.			
Phœnix Colliery	Ditto	1	Open lights.
1883.			
Mains Colliery	Wigan	2	Gunpowder.
1884.			
White Moss Colliery	Skelmersdale	1	Open lights.
1885.			
Strangeways Hall Colliery	Wigan	2	Gunpowder.
Sutton Heath "	St. Helens	1	Open lights.
Taylor Pit	Wigan	1	Gunpowder.
1886.			
Bradley Hall Colliery	Ditto	1	Open lights.
1887.			
Lilly Lane Colliery	Ditto	3	Gunpowder.
1888.			
Lea Green Colliery	St. Helens	2	Open lights.
1889.			
—	—	—	No fatal explosions.
1890.			
Ravenhead Colliery	Ditto	1	Open lights.
1891.			
Moss Hall Colliery	Wigan	2	Open light from ignition of fuse whilst lighting a shot.
1892.			
—	—	—	No fatal explosions.
1893.			
Lea Green Colliery	St. Helens	1	Open lights on scaffold in sinking pit.
1894.			
—	—	—	No fatal explosions.
22 years	Total deaths	353	West Lancashire.

LIST OF FATAL EXPLOSIONS—*continued.*

Name of Colliery.	Where situate.	No. of Deaths.	Cause of Explosion.
NORTH WALES.			
1873.			
Wynnstay Colliery	Ruabon	7	Gunpowder.
Hafod "	Ditto	5	Chargeman opened his safety lamp.
Vauxhall "	Ditto	2	Furnace.
Gwersyllt "	Wrexham	1	Open lights.
Hanmer "	Mostyn	1	Gunpowder.
1874.			
Vron Colliery	Wrexham	2	Open lights.
1875.			
Hafod Colliery	Ruabon	3	Gunpowder.
Bryn-yr-owen "	Ditto	1	Open lights.
Bersham "	Wrexham	1	Fired at Davy lamp.
1876.			
Westminster Colliery	Ditto	3	Open lights.
Wrexham "	Ditto	1	Opening safety lamp.
Buckley "	Mold	1	Open lights.
South Buckley "	Ditto	1	Ditto.
1877.			
Brynmally Colliery	Wrexham	3	Ditto.
1878.			
Pendwll Colliery	Ditto	6	Not known.
Brymbo "	Ditto	1	Open lights.
Broughton "	Ditto	1	Ditto.
1879.			
Ffrwd Colliery	Ditto	2	Open lights.
1880.			
Bersham Colliery	Ditto	9	Gunpowder.
Wrexham "	Ditto	1	Open lights.
1881.			
Llay Hall Colliery	Ditto	2	Furnace.
1882.			
Maes-y-greg Colliery	Mold	2	Fired at Davy lamp.
1883.			
Sandycroft Colliery	Ditto	1	Open lights.
1884.			
Bettisfield Colliery	Bagillt	2	Defective safety lamp.
Mostyn "	Mostyn	1	Open lights.
1885.			
—	—	—	No fatal explosions.
1886.			
—	—	—	No fatal explosions.
1887.			
Ffrwd Colliery	Wrexham	3	Gunpowder.
1888.			
—	—	—	No fatal explosions.
1889.			
Brynmally Colliery (Pendwll pit)	—	20	Safety lamps improperly open.
1890.			
—	—	—	No fatal explosions.
1891.			
—	—	—	No fatal explosions.
1892.			
—	—	—	No fatal explosions.
1893.			
—	—	—	No fatal explosions.
1894.			
—	—	—	No fatal explosions.
22 years	Total deaths	83	North Wales.

COAL MINES REGULATION ACT.

LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom, within one Year and a Day from the date of the Accident, during the Year 1894.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous Underground.	Lives lost. Above-ground.	Lives lost. Total.
						WEST LANCASHIRE.									
1	1893. July 22 10.30a.m.	5th	Long Lane -	Ashton -	Garswood Coal and Iron Co., Limited.	James Wardale -	52	Sinker -	Inquiry made. After sinking through the seam of coal, they were starting to get the mouthing in, when a piece of coal fell over on deceased; the injuries were not considered serious at the time, but blood-poisoning set in, and he expired on February 8, 1894.	–	–	1	–	–	1
2	1894. Jan. 11 4 a.m.	7th	Whitemoss Arley.	Skelmersdale -	Whitemoss Coal Co., Limited.	Peter Houghton -	64	Metal-man -	Inspection made. While deceased was engaged in roofing down and timbering the road higher, he had taken one of the old props out, when the roof gave way and fell upon him.	–	1	–	–	–	1
3	Jan. 12 9.40 a.m.	4th	Moss Arley -	Wigan - -	Pearson and Knowles Coal and Iron Co., Limited.	Edward Wood -	50	Waggon-lowerer.	Inspection made, and inquest attended. While deceased was lowering a waggon under the screen, another lowerer ran against two standing waggons by accident, and they were driven suddenly on crushing the deceased who was pushing the waggon in front.	–	–	–	–	1	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
4	1894. Feb. 5 8 a.m.	2nd	Lea Green -	St. Helens -	Sutton Heath and Lea Green Collieries Co., Limited.	Robert Hill - -	48	Collier -	Inspection made, and inquest attended. When in the act of getting down the top cannel which was overhanging his coal face, it fell suddenly, knocking him down as he stood partly under it.	–	1	–	–	–	1
5	Feb. 8 11 a.m.	5th	Brynn Hall -	Wigan - -	Brynn Hall Colliery Co., Limited.	Joseph James -	50	Collier -	Inspection made, and inquest attended. The deceased was driving a ribbing in the Wigan Six-Feet Seam, and neglected to keep a bar near the face as it advanced, when the roof fell upon him from between two slips.	–	1	–	–	–	1
6	Feb. 13 10.30a.m.	5th	Norley - -	Do. - -	Norley Coal and Cannel Co.	Peter Charnock -	42	Hooker-on	Inspection made, and inquest attended. The cage had been knocked up by the deceased and the engineman started to wind, but the steam-pressure being low, the cage was only raised about about 9 feet; and after some minutes had elapsed, the engineman lowered the cage to get the single-winding engine off its centre, which crushed the deceased while he was attempting to get a prop which had fallen in the sump.	–	–	1	–	–	1

List of Fatal Accidents, &c.—*continued.*

No. of Accidents.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous. Underground.	Above-ground.	Total.
7	1894. Feb. 15 3 a.m.	8th	Tawd Vale -	Skelmersdale -	Tawd Vale Colliery Co., Limited.	Jeremiah Sullivan	45	Pitman -	Inspection, and inquiry made. He was engaged with another man cleaning the bearers in the shaft, using the cage in which was placed a tub; the cage was stationary part way down the shaft, and during a conversation between the two men, the deceased appears to have unthinkingly made a step backwards, and stepped over end of cage and fell down the pit.	–	–	1	–	–	1
8	Feb. 21 1.15 p.m.	8th	Sherdley - -	St. Helen's -	Whitecross Co., Limited	John Talbot -	33	Collier -	Inspection made. The deceased was widening a level, and when in the act of getting a slip of coal down on the higher side, the coal knocked out three props, and the roof fell upon him before he could clear himself.	–	1	–	–	–	1
9	Feb. 25 8 a.m.	12th	Pewfall - -	Ditto -	Richard Evans & Co., Limited.	Luke Carty - -	55	Furnaceman	Inspection made and inquest attended. The day fireman and furnaceman and another person were descending the shaft, and the cage stopped at the Rushy Park Mouthing, for the day furnaceman to get out, when the deceased, who was at the mouthing, gave the signal to lower the cage, and attempted, it is supposed, to enter the cage, but failed to do so, and fell a distance of 60 yards to pit bottom, and was killed.	–	–	1	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
10	1894. Mar. 11 9.30 a.m.	4th	Garswood Hall	Wigan -	Garswood Hall Collieries Co., Limited.	James Fairhurst	50	Dataler -	Inspection made and inquest attended. When in the act of working a stump of coal in order to straighten the level, a stone gave way to a slip in the roof in the New Mine, crushing him.	–	1	–	–	–	1
11	Mar. 17 4.30 p.m.	10th	Bamfurlong -	Ditto -	Cross, Tetley, & Co., Limited.	Thomas Coulson -	50	Labourer -	Inspection made and inquest attended. The deceased was going home along a pathway crossing the railway branches, and while passing between two waggons the same were bumped together by the locomotive of the railway company, and injuring the deceased that he died afterwards at the infirmary. A bridge has since been erected over the railway, for the men to travel, by the colliery company.	–	–	–	–	1	1
12	Mar. 27 12.20 p.m.	7th	Sherdley -	St. Helen's -	Whitecross Co., Limited	James Cliff -	15	Pony driver	Inspection made and inquest attended. The deceased was a pony driver, and while waiting near the face for full tubs a layer of coal and shale fell from a slip capping a prop, and crushing the deceased.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
13	1894. Mar. 28 3 p.m.	9th	Wigan Junction	Wigan - -	Wigan Junction Colliery Co., Limited.	Thomas Ainscow -	49	Collier -	Inspection made and inquest attended. When leaving his work was racing with other men down a jig, and struck his head against a step of rock in the roof, and fell to the ground; having his tea-can in the same hand as his lamp, he could not probably have seen the roof lower at that point. He succumbed to the injuries received on the following day.	–	–	–	1	–	1
14	Apr. 2 2.30 p.m.	9th	Worsley Mesnes	Ditto -	Worsley Mesnes Colliery Co.	John Pendlebury -	35	Ditto -	Inspection made and inquest attended. Deceased was killed by a fall of roof in the shunt, where they had considered the roof good, and had not been timbered for a distance of 5 yards.	–	1	–	–	–	1
15	Apr. 27 11 a.m.	4th	Swan Lane -	Ditto -	Swan Lane Brick and Coal Co.	Peter Starkie -	26	Ditto -	Inquiry made. While in the act of holing the coal in the Three-Feet Mine a small piece fell, and injured his finger; he worked a day or two afterwards, but blood poisoning set in, and he died May 10th, 1894.	–	1	–	–	–	1
16	May. 11 9.30 p.m.	2nd	Ashton's Green	St. Helens -	Bromilow, Foster & Co., Limited.	Edward Pritchard	47	Metalman -	Inspection made and inquest attended. They had been trying to get a stone down from the roof, but failed, and while preparing to set a prop, it gave way to a break, crushing the deceased that he succumbed to the injuries received the following day.	–	1	–	–	–	1

List of Fatal Accidents, &c.—*continued.*

No. of Accidents.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous. Underground.	Above-ground.	Total.
17	1894. May 27 9 p.m.	1st	Gidlow -	Standish -	Wigan Coal and Iron Co., Limited.	Thomas Calwalader	39	Contractor -	Inquiry made and inquest attended. The fireman and himself had been taking out a low bar on the main road, in a little time after a small stone fell from the place injuring his back. It was not thought serious at the time, but the verdict at the inquiry was that he died from inflammation of the lungs accelerated by the blow.	–	1	–	–	–	1
18	June 8 10.45a.m.	5th	Abram -	Wigan - -	Abram Coal Co., Limited.	Joseph Greenhalgh	47	Collier -	Inspection made. The deceased was working in a wide-work face in the Arley Mine, and had propped the roof about every four feet, when a large fall occurred capping the props, and crushing the deceased.	–	1	–	–	–	1
19	June 20 12.20a.m.	5th	Moss - -	Wigan - -	Pearson & Knowles Coal and Iron Co., Limited.	Joseph Freeman -	50	Contractor -	Inspection made and inquest attended. The timber on a tram knocked a temporary prop out where deceased and others were fixing new bars to get more height. The men had control of the tram and timber themselves, but somehow the timber got on one side and knocked the prop out, causing a fall of roof on deceased.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date.	Hour of the Person's Shift i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous. Underground.	Above-ground.	Total.
20	1894. June 22 4.15 a.m	9th	Prospect	Standish	Wigan Coal & Iron Co., Limited.	Heneage Finch	59	Tunneller	Inspection made and inquest attended. While working in the face of a tunnel part of the roof in front of the bars fell on deceased. The fireman had been there an hour previous and passed it as safe.	–	1	–	–	–	1
21	July 5 2.30 p.m.	9th	Abram	Bickershaw	Abram Coal Co., Limited.	Ann Prescot	15	Screener	Inspection made. While in the act of coming down the steps from the screen, to which there was one hand-rail attached, she accidently fell and received such injuries that she died the following day.	–	–	–	–	1	1
22	July 11 11.30a.m.	5th	Meadow	Haigh	Wigan Coal and Iron Co., Limited.	Michael Pickett	18	Drawer	Inspection made and inquest attended. The deceased was working in a tunnel rising 1 in 5. Four holes had been bored into the rock, and one shot had been fired with the battery, and preparations were made for firing the second; but a misunderstanding occurred owing to there being two shot-lighters present, and a canvas door, also a curve in the tunnel between the two; when the shot went off killing the deceased and causing severe injuries to the shot-lighter who was at the face. No shots will	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous Underground.	Lives lost. Above-ground.	Lives lost. Total.
	1894.								be allowed to be fired in future, except by a shot-lighter, who must couple up the cable to the charge, as well as couple the cable to the battery.						
23	July 13 9 a.m.	3rd	Lea Green -	St. Helens -	Sutton Heath and Lea Green Collieries Co., Limited.	Edward Birchall -	47	Collier -	Inspection made, and inquest attended. He was engaged near the pit bottom widening the Main Level, and had the metal above the coal, which was 7 feet thick spragged, when the portion of the side gave way, crushing the deceased, and capping five sprags.	-	1	-	-	-	1
24	July 19 10 a.m.	4th	Bickershaw -	Leigh -	Ackers, Whitley, & Co., Limited.	Thomas Lyon -	54	Day wage-man.	Inspection made, and inquest. The deceased had taken out the sprags from under the top coal, on the side of a return airway; and the coal not coming down as he expected, he took his pick to loosen it, when the coal fell, crushing the deceased before he could clear himself.	-	1	-	-	-	1
25	July 20 3.30 p.m.	10th	Garswood Hall	Wigan -	Garswood Hall Collieries Co., Limited.	Thomas Crynes -	48	Collier -	Inspection made, and inquest attended. Deceased was working at the face, when a stone fell from a pot hole in the roof, crushing him, and he succumbed to the injuries received on the 23rd instant. He had his props set to within 4 feet of the coal face.	-	1	-	-	-	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
26	1894. July 20 1.30 p.m.	8th	Tawd Vale Arley.	Skelmersdale -	Tawd Vale Colliers Co., Limited.	James Ball -	40	Collier -	Inspection made, and inquest attended. They had been getting down the ley stone in a long wall face, and had knocked out the the sprags, and while clearing the dirt a piece of ley stone and coal fell, striking the deceased against a chock, which was about 4 feet from the coal face.	–	1	–	–	1	1
27	July 27 1 p.m.	7th	Chapel House -	Skelmersdale -	Executors of the late Edward Smith.	Patrick Walsh -	60	Greaser -	Inspection made, and inquest attended. The deceased appeared to have gone to clean the crank during a short stoppage of the winding engine, and appears to have thought the cage was at the bottom of the pit, whereas it had been stopped part way down, and was unexpectedly started again to go to the bottom, when he was caught by the crank and crushed to death.	–	–	–	–	1	1
28	Aug. 4 12 noon.	6th	Deep - -	St. Helens -	St. Helens Collieries Co., Limited.	Robert Hutchinson	32	Collier -	Inspection made, and inquest attended. The deceased was bringing a tub of coal out, and apparently the tub got off the rails and struck a prop, which had not enough clearance, causing a bar to come down, with some large stones, on the deceased.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
29	1893. Aug. 8 11 a.m.	5th	Hindley Field -	Bickershaw -	Hindley Field Coal Co., Limited.	William Hayes -	54	Day wage-man.	Inspection made and inquest attended. He went into a disused road to take up some rails, when a large stone fell upon him from the roof. It was stated that he and the fireman had examined it half an hour previously, and considered the place quite safe.	–	1	–	–	–	1
30	Sept. 5 10.30 a.m.	5th	The Park -	Ashton -	J. and R. Stone -	James Marsh -	14	Lasher-on -	Inspection made and inquest attended. The deceased unhooked the lashing chain from the tubs on the motion brow, when the hook got fast in a sleeper, which caused the rails to spring across the road, and struck the deceased, causing internal injuries, that he died the following day. Lashing on stations will be boarded between the sleepers in future.	–	–	–	1	–	1
31	Sept. 25 6.0 a.m.	1st	Langtree -	Standish -	Wigan Coal and Iron Co., Limited.	Hugh Hunter -	20	Drawer -	Inspection, and inquiry made. The deceased was found in front of three full tubs on Motion Road, having been crushed; the tubs would only be travelling slowly on this road; the manholes were 10 yards apart. He must have slipped on the rail, or had a faint, or fit, which he is said to have been subject to.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous Underground.	Lives lost. Above-ground.	Lives lost. Total.
32	1893. Oct. 17 10.30a.m.	5th	Crawford -	Aspull - -	Wigan Coal and Iron Co., Limited.	Ellen Makinson -	18	Tub cleaner	Inspection made and inquest attended. There were some tubs standing at the top of the wooden inclined stage, and the deceased appears to have pushed one over, and got in front to try to stop it, when it overpowered her, and causing such injuries that she died on the 31st instant.	–	–	–	–	1	1
33	Oct. 24 4.0 p.m.	10th	Whiston -	Prescot - -	Wigan and Whiston Coal Co., Limited.	William Johnson	51	Dataler -	Inspection made and inquest attended. The deceased, with others, was ascending the shaft, when he appears to have fallen out. The cage was a satisfactory one, but the shaft is very hot, which may have caused fainting, though there has been no complaints of it for many years.	–	–	1	–	–	1
34	Oct. 25 10.10a.m.	5th	Collins Green -	Earlstown -	Collins Green Colliery Co., Limited.	John Heyes -	15	Coal picker	Inspection, and inquiry made. The waggon lowerer bumped a waggon against the one this boy was on, and he was crushed against the screw. They stated the boy was warned, but possibly the warning came too late.	–	–	–	–	1	1
35	Oct. 29 2.30 p.m.	9th	Abraham -	Bickershaw -	Abram Coal Co., Limited.	Henry Dawes -	50	Timber drawer	Inspection made. While in the act of drawing props from under the roof, in an old roadway, a stone fell from a slip, crushing the deceased before he could clear himself. He did not use the gablock and chain, which was at hand for timber drawing.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
36	1893. Nov. 1 9.0 a.m.	3rd	Whitemoss	Skelmersdale	The Whitemoss Coal Co., Limited.	William Naylor	18	Runner-in	Inspection made and attended inquest. When running the full boxes into cage at pit bottom, a piece of coal cut his head, having fallen down the shaft. He had to undergo an operation, but succumbed on the 9th instant. The shelter has been made more secure since the accident.	–	–	1	–	–	1
37	Nov. 5 2.0 p.m.	8th	Pemberton	Wigan	J. Blundell & Sons	James Parkinson	13	Haulage-boy	Inspection made and inquest attended. The boy was guiding the haulage rope on to the drum, to keep one lap from riding on another. He appears to have fallen forward on the moving rope, and was carried rapidly between it and the drum, and was crushed.	–	–	–	1	–	1
38	Nov. 7 1.15 p.m.	8th	Garswood Hall	Ditto	Garswood Hall Collieries Co., Limited.	Timothy Pickering	32	Collier	Inspection made and inquest attended. The deceased was working the coal, on the upper side of a step, when a stone fell from between two parallel slips with the face of coal.	–	1	–	–	–	1
39	Nov. 13 6.45 p.m.	4th	Bamfaulong	Wigan	Cross, Tetley, & Co., Limited.	Thomas Watmough.	28	Collier	Inspection made and inquest attended. A fall of roof occurred between the face of coal and the timbering, which was about four feet from coal; there were two slips crossing where the stone came from; he succumbed to the injuries received on the 29th inst.	–	1	–	–	–	1

List of Fatal Accidents—*continued*.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
40	1893. Nov. 23 4 p.m.	10th	Chapel House	Skelmersdale	Executors of the late Edward Smith.	Richard Ruby	37	Collier	Inquiry made and inquest attended. The deceased had his foot crushed by a fall of ley from a slip; the injury was only considered slight, but blood poisoning set in, and he died on the 28th instant.	–	1	–	–	–	1
41	Nov. 23 7.30 p.m.	5th	Bold	St. Helens	Collins Green Colliery Co., Limited.	William Griffiths	43	Packer	Inspection made and inquest attended. While the deceased was packing behind the wide work face, a stone fell from the roof while he was in a kneeling position, and crushed him, causing his death. There did not appear to have been any neglect.	–	1	–	–	–	1
42	Nov. 27 12 noon	6th	Whiston	Prescot	Wigan and Whiston Co., Limited.	John Hayes	51	Collier	Inspection made and inquest attended. He was working in wide work face, and bared a slip running parallel with the face over the head of the coal, and had not sufficient props under it when the roof fell upon him.	–	1	–	–	–	1
43	Nov. 30 4.30 p.m.	11th	Alexandra	Wigan	Wigan Coal and Iron Co., Limited.	William Yates	38	Collier	Inspection made and inquest attended. A stone fell upon the deceased from between slips in the roof, capping some props which were set about 2 ft. 6 ins. apart. The fireman stated the props were set within two feet of the face when he examined the place an hour previously, and considered the place quite safe.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
44	1893. Dec. 8 7.40 a.m.	2nd	Edith	Hindley	Crompton and Shawcross.	Joseph Martin	25	Collier	Inspection made and inquest attended. He was assisting a contractor, and was setting props to break a shot off in bottom when the roof fell upon him. The place appeared to have been fairly timbered.	–	1	–	–	–	1
45	Dec. 14 11 p.m.	3d	Peasley Cross	St. Helens	The Whitecross Co., Limited.	James Harrison	53	Repairer	Inspection made. While in the act of repairing bars on a main roadway he had jack propped several bars to get one out, but, loosening it, a heavy fall occurred, carrying all the timber before it, and falling on him.	–	1	–	–	–	1
46	Dec. 21 10 p.m.	5th	Sherdley	Ditto	Ditto	Henry Cunliffe	22	Drawer	Inspection made and inquest attended. They were taking down chitter coal, also side coal, in their endway when some more coal fell over on deceased for want of support, the seam being 7 feet thick.	–	1	–	–	–	1
					NORTH WALES.										
1	1894. Jan. 10 6.45 a.m.	1st	Gatewen	Wrexham	Broughton and Plas-power Coal Co., Limited.	Thomas Williams	21	Collier	Inspection made and inquest attended. Having finished holing the main coal, they knocked the sprags out, and while examining the place afterwards a piece of top coal gave way to a slip, crushing the deceased.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous Underground.	Lives lost. Above-ground.	Lives lost. Total.
2	1894. Jan. 25 2 p.m.	8th	Westminster	Wrexham	Westminster Brymbo Coal and Coke Co., Limited.	Joseph Meredith	30	Stoker	Inspection made and inquest attended. While lowering a waggon of ashes, and attending to the brake, he slipped and fell between the waggon and the screen-wall. He succumbed to the injuries received on the 29th instant.	–	–	–	–	1	1
3	Jan. 26 10.30a.m.	5th	Point of Ayr	Mostyn	Point of Ayr Collieries Co., Limited.	William Jones George Hughes	20 21	Colliers' loader. Do.	Inspection made and inquest attended. The props had been taken out for getting the top coal down, and, while they were clearing the coal that had fallen, some more top coal gave way to a slip, which they had failed to secure, and which came upon the deceased before they could clear themselves.	–	2	–	–	–	2
4	Jan. 26 5.50 a.m.	1st	Wynnstay	Ruabon	Wynnstay Collieries, Limited.	William Jones David Griffiths	36 23	Collier Labourer.	Inspection made and inquest attended. The deceased with 14 other men, were descending the shaft in a double-decked cage, and when about 14 yards from the pit bottom the cage oscillated, and touched the walling of the shaft, causing the deceased to fall to the pit bottom.	–	–	2	–	–	2
5	Feb. 5 8.15 a.m.	2nd	Trefynant Clay Pit.	Ditto	J. E. Edwards	Hugh Lloyd	52	Miner	Inspection made. They were working a roadway 6 feet square in fireclay, and when in the act of setting a bar in the face to secure the roof under an old level, they were passing under, it gave way, crushing the deceased.	–	1	–	–	–	1

List of Fatal Accidents—*continued*.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
6	1894. Feb. 13 11.45a.m.	6th	Aston Hall	Hawarden	Aston Hall Coal & Brick Co.	Charles Wright	21	Waggon-lowerer.	Inquiry made. The deceased had his arm against the buffer of a railway waggon, lowering it to the screen, when another waggon which he had not secured came along behind, and crushed his arm, which had to be amputated at the infirmary, but he died the following day.	–	–	–	–	1	1
7	Feb. 13 1.30 p.m.	8th	Bettisfield	Bagillt	Bettisfield Colliery Co., Limited.	James Jones	70	Roadman	Inspection made and inquest attended. The deceased was clearing dust on the main horse level, on a curve, and was knocked down by the horse and trams, whereby he sustained a shock to the system. The nearest manhole was about eleven yards from that point. Another manhole to be made for safety on the curve.	–	–	–	1	–	1
8	Feb. 15 10 a.m.	4th	Plaspower	Wrexham	Broughton and Plaspower Coal Co., Limited.	William Davies	28	Collier	Inspection made and inquest attended. While engaged holing the clod over the main coal, a fall of coal and clunch took place between two slips, capping two props and crushing the deceased. The fireman had noticed the slip crossing, and had warned them to secure the roof.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost: Explosions of Firedamp.	Lives lost: Falls of Roof and Sides.	Lives lost: In Shafts.	Lives lost: Miscellaneous Underground.	Lives lost: Above-ground.	Lives lost: Total.
9	1894. April 9 6.30 a.m.	1st	Trevor -	Holywell -	Trevor Colliery Co., Limited.	Isaac Hughes -	36	Fireman -	Inspection made and inquest attended. The deceased was suffocated by gas in a tunnel, driven through a fault to prove the coal. He was warned of the gas having been found in the tunnel, but proceeded there, tested the gas with his safety lamp, which he laid on the floor, and ventured on to the face, when he was overcome by the gas and was suffocated. The tunnel was ventilated by air pipes.	–	–	–	1	–	1
10	April 11 3.30 p.m.	10th	Hafod - -	Ruabon - -	Ruabon Coal and Coke Co., Limited.	William Parry -	71	Collier -	Inspection made and inquest attended. The deceased was walking along the engine plane, around a curve, when a journey of 20 empty tubs were coming to meet him, and before he got in the manhole he was struck in the side, and received such injuries that he succumbed on the 14th instant. There happened to have been a compressed air hauling engine working there, which would have hindered the old man hearing the journey.	–	–	–	1	–	1
11	May 7 1 p.m.	7th	Black Park -	Chirk - -	Black Park Colliery Co., Limited.	John Williams -	52	Ditto -	Inspection made and inquest attended. They were working the main coal, on the rise side of an old road; part of the coal being	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous Underground.	Lives lost. Above-ground.	Lives lost. Total.
	1894.								loose, which they were taking down, when some top clod and bind came away from between slips, knocking out a nine feet prop, which fell upon the deceased, causing internal injuries, to which he succumbed the following day.						
12	May 15 12 noon.	6th	Westminster -	Wrexham -	Westminster, Brymbo Coal and Coke Co., Limited.	Thomas Watkins -	50	Shifter -	Inspection made and inquest attended. Deceased was being lowered down an old staple pit to examine some water pipes, when the hemp rope, $\frac{7}{8}$th inch diameter, attaching the cradle to the windlass rope broke, the deceased falling to the bottom, a distance of 30 yards. Wire ropes will be used in future.	–	–	1	–	–	1
13	May 25 8.30 a.m.	3rd	Gwersyllt -	Ditto - -	Ditto - -	Joseph Jones -	40	Collier -	Inspection made and inquest attended. They had bored a hole, and charged it near the top of the Main Coal Seam, and into the clod above, which they had failed to get down with the pick, when the clod suddenly gave way, crushing the deceased.	–	1	–	–	–	1
14	May 30 7.30 a.m.	2nd	Vron - -	Ditto - -	Vron Colliery, Limited.	Francis Jones -	53	Contractor	Inspection made and inquest attended. The deceased was capping a sprag with his pick, when the coal gave way to a slip, which caught him before he could clear himself, the seam being 6 feet thick.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
15	1894. June 8 12.45p.m.	7th	Bersham -	Wrexham -	Bersham Colliery Co., Limited.	David Davies -	33	Charter-master.	Inspection made and inquest attended. Having worked the bottom coal they knocked the props out from under the bind coal, and when in the act of getting it down, it gave way between two slips, portion of the roof also falling down upon the deceased.	–	1	–	–	–	1
16	June 14 10.30a.m.	5th	Mount Pleasant	Buckley - -	J. B. Gregory & Co.	Thomas Astbury -	38	Collier -	Inspection made, and inquest attended. They had been holing under the bottom coal, and had set two sprags, having failed in their attempt to get the clod down which was over the coal, when a piece of the clod gave way, striking the deceased against the pack, and causing such injuries that he died shortly afterwards.	–	1	–	–	–	1
17	July 2 2.30 p.m.	9th	Vauxhall -	Ruabon -	Vauxhall Colliery Co., Limited.	William Parkes	72	Overman -	Inquiry made, and inquest attended. While descending the steps from the pit bank, he accidentally fell when he was about four steps from the bottom, and succumbed to the injuries received on the 8th instant. There was a hand-rail on one side of the steps; but the doctor stated he had a touch of paralysis which might have affected him.	–	–	–	–	1	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift; *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost.					
										Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
18	1894. July 19 7.0 a.m.	1st	Vauxhall -	Ruabon - -	Vauxhall Colliery Co., Limited.	William Roberts -	25	Brakesman	Inspection made, and inquest attended. The journey going down the jig getting off the road ran into the side of roadway; and while the deceased was assisting to get the tubs on the rails, a piece of rock came away from the side, and crushed him against a tub; the tubs had disturbed the pack wall which was under the rock.	–	1	–	–	–	1
19	Aug. 11 8.30 a.m.	3rd	Ditto - -	Ditto - -	Ditto - -	Samuel Buffey -	17	Pony-driver	Inquiry made. While a new pony was being trained underground, it kicked over the shaft and struck deceased on the head.	–	–	–	1	–	1
20	Sept. 4 4 p.m.	10th	Ponkey -	Ruabon -	William Hughes, High Street, Rhos, Ruabon.	Robert Evans -	59	Contractor -	Inspection made, and inquest attended. A boy was lowered down a small pit, which had been opened by some workmen during the strike, to fetch a chain up that had fallen to the bottom of the pit, when he was overcome by black damp; the deceased was afterwards lowered by the windlass to get the boy up; he sent the boy up with the rope, and was overcome himself afterwards by the black damp, and when got out he was found to be suffocated. The sump where the black damp was giving off has now been filled up with debris.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
21	1894. Sept. 14 11.30a.m.	6th	Westminster -	Wrexham -	Westminster Brymbo Coal and Coke Co., Limited.	William Williams -	21	Collier -	Inspection made, and inquest attended. While in the act of getting the clod down above the main coal with his pick, a portion struck him, causing internal injuries, to which he succumbed on the 16th inst.	–	1	–	–	–	1
22	Oct. 3	8th	Bersham -	Ditto -	Bersham Colliery Co., Limited.	Robert Lake -	46	Lay wage-man.	Inspection made and inquest attended. Deceased and two other men were in a manhole when the jig was in motion; the empty tubs had passed up, and the deceased stepping out too soon was crushed by the full journey coming down. The manhole was sufficient size for six men to take refuge.	–	–	–	1	–	1
23	Nov. 21 5.50 p.m.	11th	Wynnstay -	Ruabon -	Wynnstay Collieries, Limited.	Thomas Jones -	45	Repairer -	Inspection made, and inquest attended. The deceased was crushed through a runaway tub bumping against a tub he was pushing up a brow. The runaway tub was said to have got unshackled accidentally from another full tub, which two other repairers were bringing out.	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
24	1894. Dec. 5 2.40 p.m.	9th	New Broughton	Wrexham	Thomas Clayton	Enoch Lloyd	36	Collier	Inspection made and inquest attended. While the deceased was in the act of getting coal down in the face of a wickett, a stone fell upon him from between two slips in the roof. His brother, who was working with him stated that the stone capped two props, and they had considered the place well timbered.	–	1	–	–	–	1

COAL MINES REGULATION ACT, 1887.

BOARD FOR EXAMINATIONS FOR THE MINING DISTRICT OF WEST LANCASHIRE AND NORTH WALES.

QUESTIONS for the EXAMINATION of CANDIDATES for FIRST CLASS CERTIFICATES of COMPETENCY, June 1894.

INSTRUCTIONS TO CANDIDATES.

1. During the Examination the Candidate must not speak to any other Candidate or hold any communication with him, nor must he leave the room until he has completed his paper, nor then without the permission of the Secretary.
2. Answers must be written on the paper supplied. Each sheet must be signed at the foot with the name of the Candidate. The Candidate is not required to answer all the questions, but he must show a competent knowledge in each subject. Answers must be written on one side of the paper only.
3. All papers handed to the Candidate must be returned, and no Candidate is allowed to take away with him a copy of the questions, or of any of them.

Preliminary.

State your name, age, and address.

Elementary Education and Ventilation.

1. Describe the contrivances necessary for splitting and conducting air currents underground, and the instrument used for measuring the results.
2. What is the utilized horse power producing ventilation when the quantity of air passing is 50,000 cubic feet per minute, and the water gauge is 1·5 inches?
3. What are the regulations as to—
   (*a.*) Ventilation;
   (*b.*) Inspections;
   (*c.*) Safety lamps?
4. Give a sketch of an original Guibal fan, and another showing any improved type of it that you know of.
5. Mark the ventilation on an annexed plan of a fiery mine ventilated by a fan.

Mechanics and Machinery.

6. Describe by a sketch the sort of brake you would use for the adequate control of the drum on a powerful pair of winding engines.
7. What regulations, in addition to inspection, would you enforce on those having charge of—
   (*a.*) Winding ropes;
   (*b.*) Detaching hooks;
   (*c.*) Cage chains?
8. Give a brief outline of the daily duties of a winding engine-man and a stoker, noting specially those which relate to questions of safety.
9. What in your opinion are the comparative advantages and disadvantages between a compound condensing pump placed underground, and a surface pump of the Cornish type, where you have 1,000,000 gallons of water to raise 200 yards per 24 hours?

10. What is the pressure of steam per square inch in a boiler, the whole length of the safety valve lever being 32 inches, distance between the fulcrum and the valve 4 inches, diameter of valve $2\frac{1}{2}$ inches, and a weight of $300\frac{5}{8}$ lbs. placed at the end of the lever?

11. What sort of ropes do you prefer winding with at a deep colliery with a large output? Give reasons for your reply.

12. What are the comparative advantages and disadvantages of electricity and hydraulic power for driving pumps underground?

Mine Working.

13. State the principal duties of a manager.

14. In working a seam longwall, where the roof is much stronger than the floor, what effects are the roadways likely to show?

15. Give a sketch of the way you would secure a main road through a heavy fall where the top weight is great.

16. In a winding shaft with cages running on weighted iron conductors, you have to wind coal to a limited extent from a mine half way down the shaft:—
    Describe and sketch the arrangements you would provide at such mine to allow the winding to be done without risk of accident.

17. What explosive do you prefer to use for either coal or stone shots in a fiery mine? Give reasons for your reply, and state what precautions you would adopt generally in the system of shot firing.

18. Describe any method you know of for testing—
    (*a.*) Safety lamps;
    (*b.*) Anemometers.

19. In dividing a mine into different splits of ventilating current, what are the chief points to take into consideration?

Timbering.

20. Show by a sketch the method of timbering you would adopt in a level roadway in a mine worked longwall where the inclination is 1 in 3.

21. Under what conditions may the use of iron or steel girders not be satisfactory in a mine?

22. What are the requirements of the Mines Regulation Act, as to "sprags" and the withdrawal of "props."

Surveying.

23. Describe the best method of levelling underground on an incline of about 1 in 3.

24. What has to be guarded against in basing opinions on old plans?

25. Describe how you would make an underground survey with fast needle and how you would connect it with the surface plan.

Shafts.

26. With a winding shaft 500 yards deep, with two cages working in it on weighted iron conductors, describe a test by which you can ascertain (without an inspection of the weights in the dibhole) that such weights are hanging free and clear and in working order.

27. In sinking a shaft how would you protect the bottom bricking ring from damage by shots when proceeding with sinking after bricking up?

28. How often should guide rods be examined, and how often do you consider it advisable to examine the weights and fastenings at the pit bottom when usually submerged in water?

Questions for the Examination of Candidates for Second Class Certificates of Competency, June 1894.

Instructions to Candidates.

1. During the Examination the Candidate must not speak to any other Candidate or hold any communication with him, nor must he leave the room until he has completed his paper, nor then without the permission of the Secretary.
2. Answers must be written on the paper supplied. Each sheet must be signed at the foot with the name of the Candidate. The Candidate is not required to answer all the questions, but he must show a competent knowledge in each subject. Answers must be written on one side of the paper only.
3. All papers handed to the Candidate must be returned, and no Candidate is allowed to take away with him a copy of the questions, or of any of them.

Preliminary.

State your name, age, and address.

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1. If a tank for winding water measures (inside) 8 feet 3 inches by 4 feet wide and 3 feet 6 inches deep, what is the quantity of water in gallons contained in 100 winding?
2. What are the requirements to be observed in the erection of—
   (*a.*) A furnace;
   (*b.*) A fan?
3. What are the duties of a fireman or deputy as regards timbering?
4. Show by a sketch how you would erect a pair of air doors between the main intake and return. Give sizes.
5. What weight of coal is contained in $1\frac{1}{2}$ statute acres, where the coal is 3 feet thick?
6. How often would you think it necessary to measure the air in a mine?
7. What in your opinion is the best kind of safety lamp? Give reasons for your reply.
8. How often should working places be inspected during a shift?
9. What fittings should there be on a steam boiler?
10. Show by a sketch how you would secure a cage to the winding rope.

Report of Assistant Inspector.

B 17436
25

Newton-le-Willows, Lancashire,
15th February 1895.

Sir,

In accordance with section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the year 1894 I exercised the duties of Inspector of Mines in the district of West Lancashire and North Wales, and in so doing I have acted as assistant to and under the direction of Mr. Hall, the Chief Inspector in charge of the district.

I have, &c.
D. H. F. MATHEWS.

The Right Honourable
Herbert H. Asquith, Q.C., M.P., &c.,
Her Majesty's Principal Secretary of State,
Home Office, Whitehall.

REPORT

OF

J. B. ATKINSON, Esq., H.M. INSPECTOR OF MINES

FOR THE

EAST SCOTLAND DISTRICT (No. 1),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887, the Metalliferous Mines Regulation Acts, 1872 and 1875, and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
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1895.

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Mr. J. B. Atkinson's Report.

Report of the Inspector of Mines for the Eastern District of Scotland for the Year ended 31st December 1894.—By J. B. Atkinson, Esq.

Part I.

Introduction and General Results for the Year.

10, Foremount Terrace, Glasgow,
14th February 1895.

Sir,

In accordance with Section 43 of the Coal Mines Regulation Act, 1887, and Section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour, as Inspector in charge of the East of Scotland Mines Inspection District, to lay before you my Annual Report on the operation of these Acts during the year 1894.

Table I. gives the persons employed, tons of mineral raised, fatal accidents and deaths with respect to all the mines in the district during the year 1894.

Table I.

—	Persons employed.	Minerals raised.	Fatal Accidents.	
		Tons.	Number.	Deaths.
Mines under Coal Mines Regulation Act, 1887 -	54,729	14,513,935	63	70
Mines under Metalliferous Mines Regulation Act, 1872.	644	223,678	2	2
Total - - -	55,373	14,737,613	65	72

These figures compare unfavourably with those for the previous year. The deaths are nine more, while the quantity of mineral, owing to a prolonged strike, is 2,765,836 tons less.

Part II.

Output of Minerals from Mines under both the Coal and Metalliferous Mines Regulation Acts, arranged according to Counties and Geological Formations.

Table II. shows the quantities of minerals raised from the different geological formations in the counties of which the district is made up.

TABLE II.

Counties.	Geological Formation.	Tons of Mineral raised.						
		Coal.	Fire-clay.	Ironstone.	Oil Shale.	Other Minerals.		Total.
						Tons.	Description.	
Clackmannan - -	Coal Measures -	297,619	1,714	—	—	—	—	299,333
Edinburgh - -	" " -	109,783	28,106	—	425	—	—	138,314
	Carb. Limestone	607,726	4,975	61,711	2,569	57,317	Limestone	734,298
	Calc. Sandstone	3,172	—	—	706,147	89,663	"	798,982
Fife - - -	Coal Measures -	971,912	3,653	—	—	—	—	975,565
	Carb. Limestone	1,812,107	20,721	13,086	—	48,016	Limestone	1,893,930
	Calc. Sandstone	—	—	—	—	8,096	"	8,096
Haddington - -	Carb. Limestone	248,334	2,764	—	—	—	—	251,098
Lanark (part of) -	Coal Measures -	6,098,532	12,431	19,757	15,625	3,039	Blaes	6,149,384
	Millstone Grit -	—	65,010	—	—	—	—	65,010
	Carb. Limestone	517,606	1,389	12	30	15,716	Limestone	534,753
	Calc. Sandstone	—	—	—	71,226	—	—	71,226
	Silurian - -	—	—	—	—	1,876	Lead ore	1,876
Linlithgow - -	Coal Measures -	400,212	10,665	24,255	—	—	—	435,132
	Carb. Limestone	230,468	—	5,876	—	2,994	Limestone	239,338
	Calc. Sandstone	—	—	—	1,168,488	—	—	1,168,488
Peebles - -	Carb. Limestone	904	—	—	—	—	—	904
Stirling (part of) -	Coal Measures -	912,435	11,987	—	2,497	733	Ganister	927,652
	Millstone Grit -	2,843	29,372	—	—	8,288	"	40,503
Sutherland - -	Oolite - -	3,731	—	—	—	—	—	3,731
	Totals -	12,217,384	192,787	124,697	1,967,007	235,738	—	14,737,613

Table III. shows the total of the different kinds of mineral raised from the various formations.

TABLE III.

Geological Formation.	Tons of Mineral raised.						
	Coal.	Fire-clay.	Ironstone.	Oil Shale.	Other Minerals.		Total.
					Tons.	Description.	
Oolite - - -	3,731	—	—	—	—	—	3,731
Coal Measures - -	8,790,493	68,556	44,012	18,547	3,039 733	Blaes Ganister	8,925,380
Millstone Grit - -	2,843	94,382	—	—	8,288	"	105,513
Carboniferous Limestone -	3,417,145	29,849	80,685	2,599	124,043	Limestone	3,654,321
Calciferous Sandstone -	3,172	—	—	1,945,861	97,759	"	2,046,792
Silurian - - -	—	—	—	—	1,876	Lead ore	1,876
Totals - -	12,217,384	192,787	124,697	1,967,007	235,738	—	14,737,613

PART III.

SUMMARY of INFORMATION from ANNUAL RETURNS as to PERSONS employed and MINERALS raised, and as to FATAL ACCIDENTS for MINES under the COAL MINES REGULATION ACT.

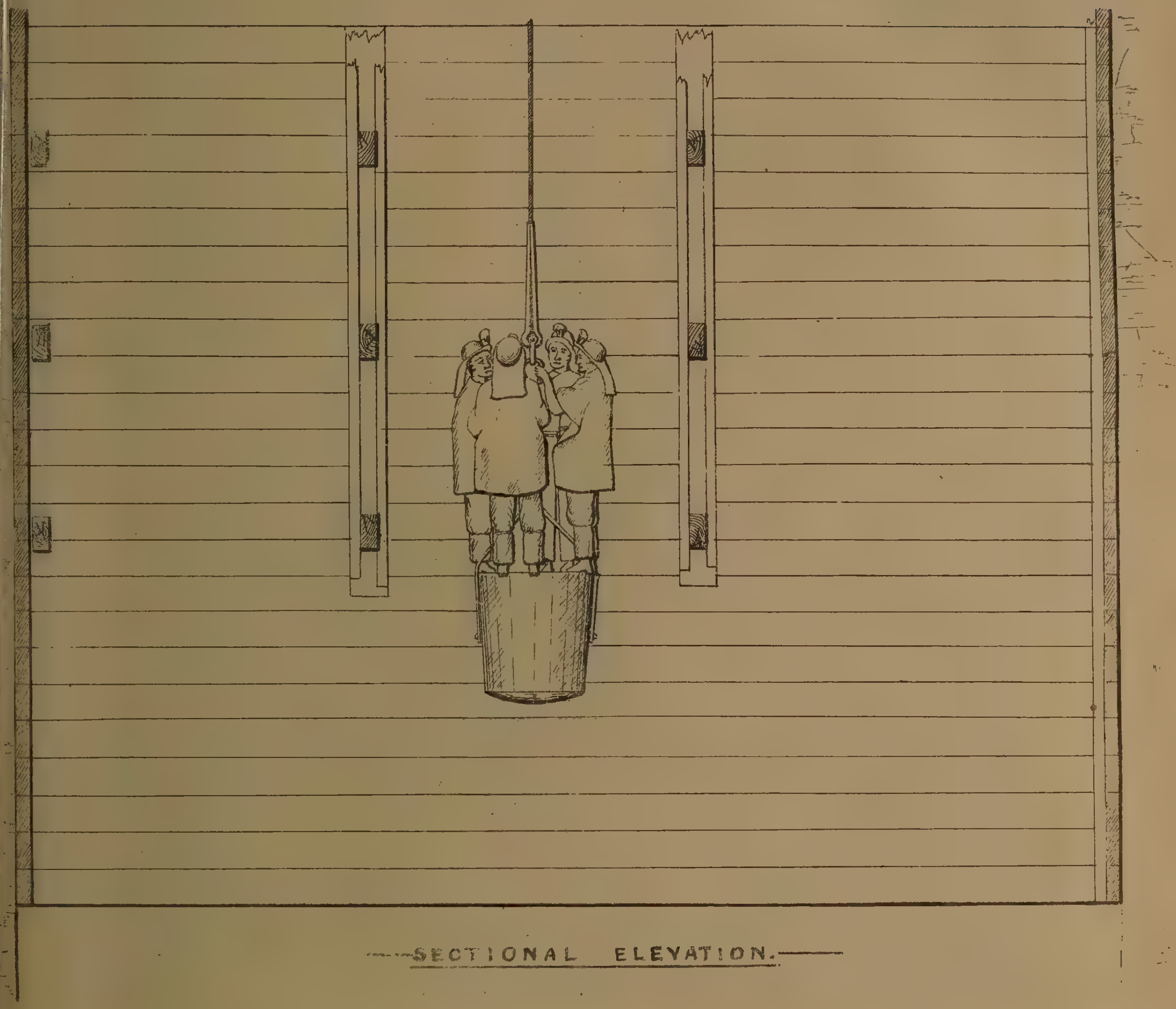
Table IV. gives a summary of the information contained in the annual returns for the past year as to the persons employed and minerals raised at the mines under the Coal Mines Regulation Act in the district; the table is arranged in counties, Peebles and Sutherland, each of which contains one mine only, being grouped together.

Table V. is partly a repetition of Table IV. with the fatal accidents and resulting deaths added, and gives the numbers of persons employed and tons of mineral wrought per fatal accident and death.

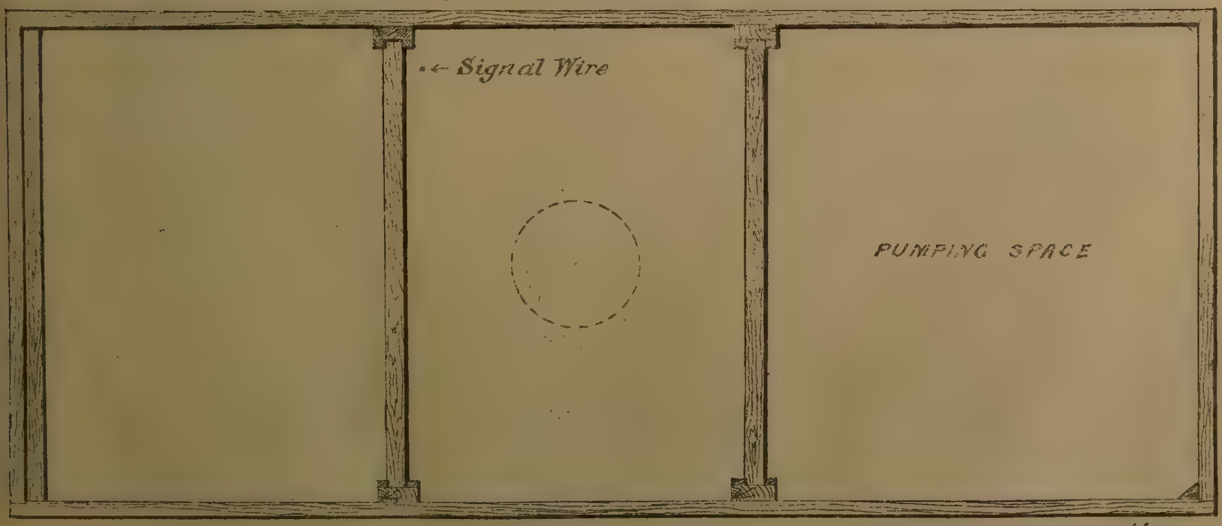
For the purpose of comparison the totals and averages for the two previous years are given in Tables IV. and V.

KELTY.—AITKEN PIT.

Scale—1 inch = 4 feet



SECTIONAL ELEVATION.



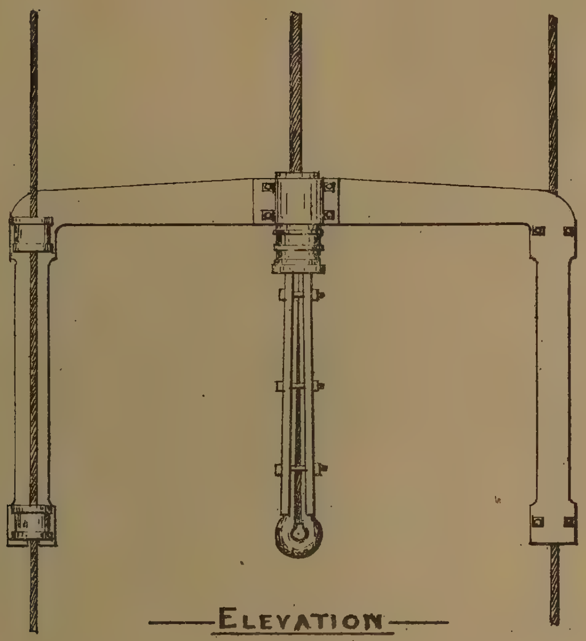
H. Johnstone Fecit.

PLAN.

J. B. Atkinson

KELTY—AITKEN PIT—RIDER

Scale—1 inch = 1 foot



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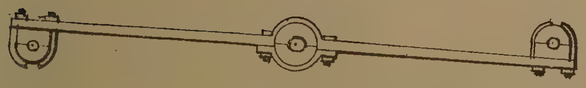


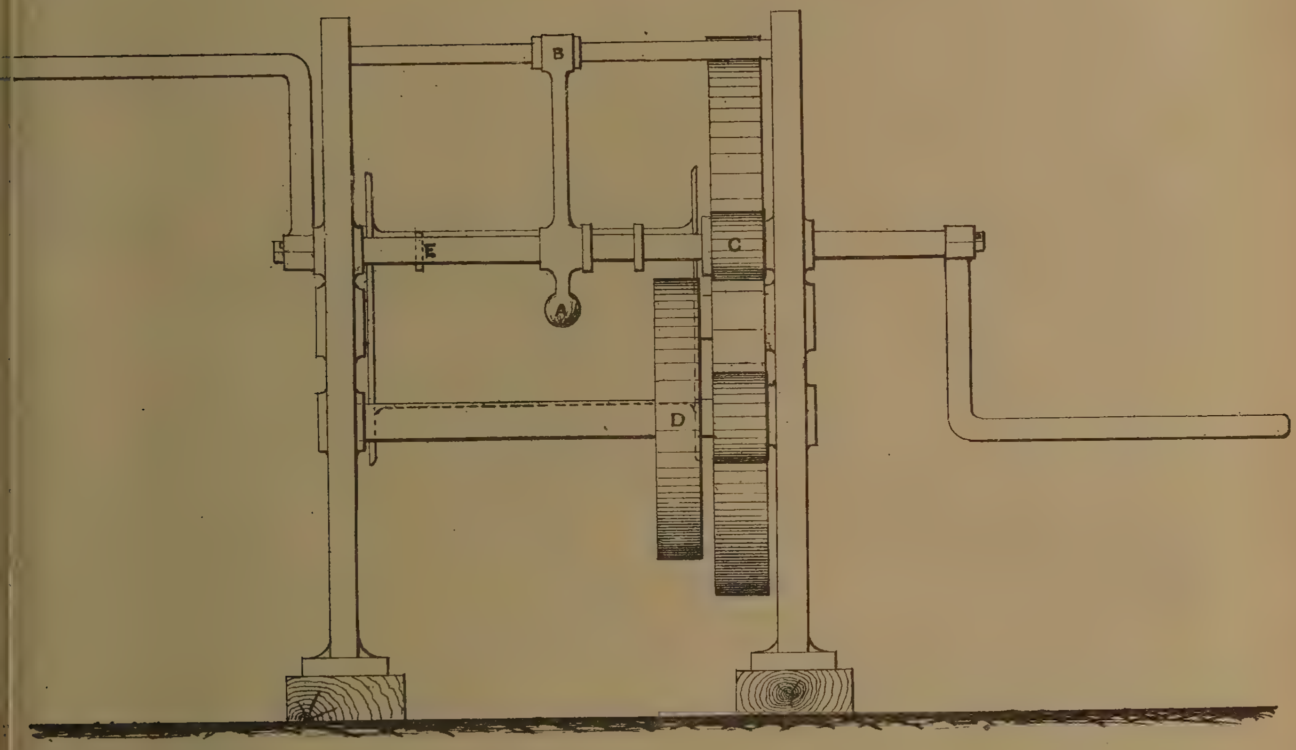
PLAN

J. B. Atkinson

H. Johnstone Fecit.

HOME FARM — HAND-POWER CRANE

SCALE — 1 INCH = 1 FOOT



BACK ELEVATION

J. B. Atkinson

H. Johnstone Fecit.

TABLE IV.—SUMMARY of Persons employed and Minerals raised at Mines under the Coal Mines Regulation Act, 1887, during the Year 1894.

Counties.	Persons Employed. Underground. Males only. A. 12 to 16.	Above 16.	Total A.	Above ground at Pit. B. 12 to 13. Boys.	12 to 13. Girls.	13 to 16. Boys.	13 to 16. Girls.	Above 16. Females.	Above 16. Males.	Total B.	Total A. and B.	Above ground on private branch Railways, Washing and Coking Coal. C. 12 to 13. Boys.	12 to 13. Girls.	13 to 16. Boys.	13 to 16. Girls.	Above 16. Females.	Above 16. Males.	Total C.	Total A., B., and C.	Tons of Mineral raised. Coal.	Fire-clay.	Iron-stone.	Oil Shale.	Other Mineral.	Total.
Clackmannan	94	1,053	1,147	—	—	3	2	16	179	200	1,347	—	—	—	—	—	44	44	1,391	297,619	1,714	—	—	—	299,333
Edinburgh	291	4,810	5,101	—	—	85	—	—	956	1,041	6,142	—	—	18	—	—	75	93	6,235	720,681	33,081	61,711	709,141	—	1,524,614
Fife	1,039	9,013	10,052	10	—	72	81	281	1,351	1,795	11,847	—	—	8	15	6	413	442	12,289	2,784,019	24,374	13,086	—	—	2,821,479
Haddington	88	842	930	—	—	5	—	—	135	140	1,070	—	—	5	—	—	13	18	1,088	248,334	2,764	—	—	—	251,098
Lanark, Eastern portion	2,069	18,091	20,160	10	1	380	12	110	2,976	3,489	23,649	5	—	43	—	4	594	646	24,295	6,616,138	78,830	19,769	86,881	3,039	6,804,657
Linlithgow	302	3,833	4,135	—	—	51	—	37	507	595	4,730	1	—	3	—	6	150	160	4,890	630,680	10,665	30,131	1,168,488	—	1,839,964
Peebles, and Sutherland	—	20	20	—	—	—	—	—	4	4	24	—	—	—	—	—	—	—	24	4,635	—	—	—	—	4,635
Stirling, Eastern portion	439	3,305	3,744	—	—	21	4	82	302	409	4,153	—	—	10	—	24	330	364	4,517	915,278	41,359	—	2,497	9,021	968,155
Totals	4,322	40,967	45,289	20	1	617	99	526	6,410	7,673	52,962	6	—	87	15	40	1,619	1,767	54,729	12,217,384	192,787	124,697	1,967,007	12,060	14,513,935
Ditto preceding year	4,397	39,413	43,810	17	5	582	114	538	6,452	7,708	51,518	5	—	80	20	33	1,580	1,718	53,236	14,909,951	231,523*	193,934*	1,923,987	13,340	17,272,735
Ditto 1892	4,644	39,502	44,146	11	—	665	113	587	6,590	7,966	52,112	2	2	73	11	46	1,456	1,590	53,702	15,718,976	255,689	167,793	2,054,795	13,646	18,210,899

* Owing to an error 17,128 tons of ironstone, mined in Fife in the year 1893 was entered as fire-clay, and these figures were given in last year's report as 248,651 and 176,806.

TABLE V.—SUMMARY of Persons employed, Mineral raised, Fatal Accidents, and Deaths at Mines under the Coal Mines Regulation Act, 1887, during the Year 1894.

Counties.	Persons employed. At Pit. Under-ground. A.	At Pit. Sur-face. B.	At Pit. Total. A. and B.	On Rail-ways, &c. C.	Total A., B., and C.	Tons of Mineral raised.	Fatal Accidents and Deaths. At Pit. Under-ground. A. No.	Under-ground. A. Lives lost.	Surface. B. No.	Surface. B. Lives lost.	Total. A. and B. No.	Total. A. and B. Lives lost.	On Rail-ways, &c. C. No.	On Rail-ways, &c. C. Lives lost.	Total A., B., and C. No.	Total A., B., and C. Lives lost.	Persons employed per fatal Accident and Death. Per fatal Accident. At Pit. Under-ground. A.	Sur-face. B.	Total. A. & B.	On Rail-ways, &c. C.	Total A., B., & C.	Per Death. At Pit. Under-ground. A.	Sur-face. B.	Total. A. & B.	On Rail-ways, &c. C.	Total A., B., & C.	Tons of Mineral raised. Per fatal Accident. A. and B.	Per Life lost. A. and B.
Clackmannan	1,147	200	1,347	44	1,391	299,333	3	3	—	—	3	3	—	—	3	3	382	—	449	—	464	382	—	449	—	464	99,778	99,778
Edinburgh	5,101	1,041	6,142	93	6,235	1,524,614	7	7	1	1	8	8	—	—	8	8	729	1,041	768	—	779	729	1,041	768	—	779	190,577	190,577
Fife	10,052	1,795	11,847	442	12,289	2,821,479	13	16	2	2	15	18	—	—	15	18	773	898	790	—	819	628	898	658	—	683	188,099	156,749
Haddington	930	140	1,070	18	1,088	251,098	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lanark, Eastern portion	20,160	3,489	23,649	646	24,295	6,804,657	24	28	6	6	30	34	—	—	30	34	840	582	788	—	810	720	582	696	—	715	226,822	200,137
Linlithgow	4,135	595	4,730	160	4,890	1,839,964	4	4	—	—	4	4	—	—	4	4	1,034	—	1,183	—	1,223	1,034	—	1,183	—	1,223	459,991	459,991
Peebles, and Sutherland	20	4	24	—	24	4,635	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stirling, Eastern portion	3,744	409	4,153	364	4,517	968,155	3	3	—	—	3	3	—	—	3	3	1,248	—	1,384	—	1,506	1,248	—	1,384	—	1,506	322,718	322,718
Totals and averages	45,289	7,673	52,962	1,767	54,729	14,513,935	54	61	9	9	63	70	—	—	63	70	839	853	841	—	869	742	853	757	—	782	230,380	207,342
Ditto preceding year	43,810	7,708	51,518	1,718	53,236	17,272 735	52	54	7	7	59	61	1	1	60	62	842	1,101	873	1,718	887	811	1,101	845	1,718	859	292,758	283,160
Ditto 1892	44,146	7,966	52,112	1,590	53,702	18,210,899	60	60	6	6	66	66	5	5	71	71	736	1,328	790	318	756	736	1,328	790	318	756	275,923	275,923

Table VI. shows the variation between last year and the year 1893 in the different counties composing the district in respect of persons employed, minerals worked, fatal accidents and deaths; an increase is shown by the sign + and a decrease by the sign –

TABLE VI.

County.	Persons employed A., B., & C.	Tons of Mineral.						Fatal Accidents.	
		Coal.	Fire-clay.	Ironstone.	Oil Shale.	Other Mineral.	Total.	No.	Deaths.
Clackmannan - -	+ 9	–112,790	– 1,428	—	—	—	–114,218	+ 2	+ 2
Edinburgh - -	+201	–151,949	–24,362	–25,173	–49,370	—	–250,854	– 7	– 8
Fife - - -	+417	–835,511	– 6,422	–13,425	– 5,014	—	–860,372	– 2	+ 1
Haddington - -	– 63	– 84,767	+ 1,387	—	—	—	– 83,380	– 1	– 1
Lanark, Eastern portion	+888	–1,226,381	– 2,004	– 6,379	– 7,791	– 844	–1,243,399	+11	+14
Linlithgow - -	+ 16	–100,730	+ 140	–21,286	+107,454	—	–14,422	*	*
Peebles, and Sutherland.	– 37	– 1,662	—	—	—	—	– 1,662	*	*
Stirling, Eastern portion	+ 62	–178,777	+ 6,047	– 2,974	– 2,259	– 436	–190,493	*	*
Totals - -	+1,493	–2,692,567	–38,736	–69,237	+ 43,020	– 1,280	–2,758,800	+ 3	+ 8

* Same as last year.

The above table shows an increase of 1,493 persons employed at mines in the district under the Coal Mines Regulation Act, and the large decrease of 2,758,800 tons of mineral wrought; this decrease is made up of decreases of coal, fire-clay, and ironstone produced at the mines affected by the strike; at the oil shale mines in the calciferous sandstone, which continued working during the strike, there was the substantial increase of 59,797 tons; but as some oil shale is produced at the collieries, the net increase of oil shale is 43,020 tons.

PART IV.

FATAL ACCIDENTS at MINES under the COAL MINES REGULATION ACT.

During the year 1894, 63 fatal accidents, causing the deaths of 70 persons, took place in connexion with mines under the Coal Mines Regulation Act, 1887. Of this number 54 occurred underground (head A), causing 61 deaths; 9 occurred on the surface at the mines (head B), causing as many deaths; no accident occurred on private branch railways, &c., (head C.) This is an increase of 3 accidents and 8 deaths as compared with the previous year.

These fatal accidents are tabulated in Appendix A.

Explosion of Fire-damp.—As in the year 1893, so last year, only one life was lost through an explosion of fire-damp. This accident, No. 50, Appendix A (*see* also No. 23 Table VIII.), also occurred in Fife, a part of the district in which fire-damp is rarely observed.

Deceased, who was a contractor brusher, was sent with his younger brother to repair an air-course in the south side of No. 1 section of longwall workings in the Main Coal. Not having the necessary tools he went into an unoccupied face, the road leading to which was fenced off, to obtain them. At the termination of the shift he returned with the tools to the place from which he had obtained them, when gas was ignited at his open light, causing an explosion, whereby he was slightly burned on the face and arms. He died a week afterwards through the shock, acting on a weak constitution.

The whole section had been standing during the strike, and the roof had fallen, more or less, in all the places, only some of which had been won out again after the termination of the strike, and not to a sufficient extent to allow the air-current to properly ventilate the place of the accident. Before the strike gas had been observed in the place, but by keeping a hurdle-screen erected on the road near to the face, it was kept clear. The fireman, when examining the place two days prior to the accident, found a small quantity of gas in it, and in consequence fenced the place off. On the morning of the day of the accident he also found a small quantity of gas at the face. Apparently gas had accumulated between the visits of deceased.

It was an error on the part of deceased to cross the fence and go into a place known to give off gas, and in which the normal ventilating current was not circulating. It appeared

he had made an examination of the section some shifts previous and found it clear of gas, and this may partly account for his conduct.

This accident was not reported to me within twenty-four hours of its occurrence, as required by section 35 (1) of the Coal Mines Act, in fact I was first aware of it by seeing a notice of the man's death in the newspaper more than a week after the accident. For this neglect the manager was fined 3*l.* by the Sheriff. (*See* prosecution No. 24, Table X.)

Falls of Roof and Side.—Thirty-six separate accidents caused the loss of thirty-nine lives, compared with twenty-nine accidents and thirty-one deaths in the previous year; considering that most of the collieries were idle for sixteen weeks this is a very large increase of this class of accident. Careful inquiry and inspection of the place was made in each case.

Table VII. shows the occupation of the persons killed, and some of the conditions under which the accidents took place.

TABLE VII.

Occupation of Persons killed.	Fatal Accidents at Face.						Fatal Accidents on Roads.			
	Longwall.		Solid Place.		Stooping.		Through Long-wall Waste.		Through Stoops.	
	Roof.	Side.	Roof.	Side.	Roof.	Side.	Roof.	Side.	Roof.	Side.
Miner - - - -	13	3	2	1	3	4	—	—	—	—
Brusher, repairer - - -	3	—	—	—	—	—	3*	—	2*	—
Oversman - - - -	—	—	—	—	—	—	—	—	1	—
Attending coal cutter - -	1*	—	—	—	—	—	—	—	—	—
Totals - -	17	3	2	1	3	4	3	—	3	—

* Three of these accidents each caused the loss of two lives.

Four fatal accidents due to falls, the investigation of one of which led to a prosecution, and the other three each involving the loss of two lives, will be noticed.

No. 2, Appendix A.—This accident happened on the 15th August 1893, but the injured man lingered until the 5th July 1894, when he died from blood poisoning. His spine was injured by the accident, and he was never able to resume work. He was for some time an inmate of the Royal Infirmary and the Longmore Institution, Edinburgh; he returned to Fife in April, and was so far recovered as to be able to go about, but was still attended by the doctor, who stated in a letter, in answer to an inquiry made by me through the Procurator Fiscal, "There is no doubt that he died from the *effects* of the injury received at Denend."

The cause of the accident was a fall of stone from the roof at the face of a longwall working in a seam about 3 feet thick. When I inquired into the accident I found that inspection of the workings in terms of General Rule 4 had not been fully carried out, and a prosecution was instituted, resulting in the under-manager and fireman being fined 30*s.* and 5*s.* respectively. (*See* prosecutions 26 and 27, Table X., in last year's Report.)

No. 4, Appendix A.—This accident occurred at the working face of a coal seam with a hard sandstone roof, worked long wall, and where the holing was effected by a Gillot and Copley coal cutting machine, driven by compressed air. The holing was usually done during the back shift, and the coal taken down and filled during the succeeding fore shift, but as the section had been standing for several months, and operations had only recently been resumed, the machine was set to work on the fore shift on the day of the accident in order to bring the face, which was 50 yards long, into a proper condition. When the machine began the "cut" the deceased were in front of it, arranging for its forward progress, and a third man, Neil McCready, was behind. Shortly after starting the machine the roof fell, and deceased were buried under the fall. McCready was struck on the head and stunned. When he recovered consciousness the machine was still working. He stopped it, and creeping forward found the deceased men beneath the fall, which was about 30 feet in length, 5 feet in breadth, and 1 foot 9 inches in thickness.

Only about 7 feet of coal had been taken off the face since the recommencement of the the section. The roof had broken along the face for some distance over the coal while work

was suspended, and, as is usual with a sandstone roof it broke along the face as each alternate cut of coal was taken off; the fall took place between these breaks. A very large quantity of water came off simultaneously with the fall, and the pressure of this water had probably something to do with the sudden burst. The noise made by the coal-cutting machine may have prevented the men hearing the "working" or cracking of the roof which usually precedes a fall of stone.

No. 16, Appendix A.—In this case two experienced miners, both of whom had been officials, named Bell, who, however, were not related, were brushing a haulage road through stoops in the Splint Coal seam, and were engaged drilling a shot hole, when a mass of the rock roof, weighing about 1½ tons, suddenly fell; one of them was killed on the spot, the other managed to crawl clear of the fall, but died soon after reaching the surface.

No. 30, Appendix A.—The deceased men, one of whom was an official, were engaged on the colliers' idle day in repairing the timber on a haulage road which at the point had a stoop of coal on one side and long wall waste on the other. The roof was composed of soft blaes, with occasional harder bands. The men started work at 2 p.m., and it was not known that any accident had happened until 10 p.m., when the next shift reached the place. Judging from the amount of tallow which had been consumed in the lamps used by the deceased men, the fall had taken place about 4 p.m. The roof over the stoop of coal appeared to have come away and swung the timber.

In Shafts.—Six shaft accidents caused the loss of 10 lives, two of the accidents being each fatal to three persons. This as compared with the previous year is a reduction of two in the number of accidents, but an increase of two in the resultant deaths.

No. 20, Appendix A.—Deceased was bottomer at a mid-working situated 91 fathoms above the pit bottom. The output from this seam having increased considerably, the work became too heavy for one man, and on the day on which the accident took place another bottomer was sent to assist. They shared the work equally, pulling off the empty tubs or placing the loaded ones upon the cage in turn, or as might be most convenient, the man who *loaded* the cage always signalling it away.

A cage bearing an empty tub had been set on the shuts at the mid-working. Deceased, who was then on the north side of the shaft, pushed aside the gate, and pulled off the empty tub, and, almost simultaneously, his assistant pushed on a loaded tub from the south side, and belled away the cage, which was at once raised towards the pit head. Deceased appeared to have momentarily forgotten the presence of the assistant, or not to have been aware that he meant to hang on, and probably following his previous custom, he turned the empty tub into the lye, brought forward a loaded one, and pushed it into the open shaft, falling with it to the pit bottom, where he was instantly killed. It was stated that deceased was the recognised bottomer at this seam. In this case the assistant should not have interfered with the signalling, and in permitting him to do so deceased contravened Special Rule 59. Such an accident would probably have been prevented by additional Special Rule 2, which was afterwards established.

No. 25, Appendix A.—This accident, involving the loss of three lives, took place in a pit in the course of sinking to a depth of about 200 fathoms. At the time of the accident the depth reached was 41 fathoms. The shaft was of unusually large dimensions, being 11 feet by 27 feet inside the barring or wood lining. The plan and sectional elevation on plate I. give the necessary particulars for explaining the accident.

Five shots were ready for lighting in the bottom of the pit, and all the workers had ascended to the surface except four, including the chargeman. After the usual signals made before firing shots had been given, the shots were lighted by the four men remaining in the bottom, who then got on to the kettle, standing on its rim and holding on to the chain. The chargeman signalled the kettle away and it was raised in the usual way, and ascended steadily for about 10 fathoms. The chargeman, who was the only one of the four who escaped death, stated that when about 10 fathoms up, one of the deceased men put his hand against one of the buntons and caused the kettle to oscillate, and it swung backwards and forwards several times, and the three deceased men were knocked off or fell off one after the other and fell to the bottom.

The engineman observing that something was amiss stopped his engine. The chargeman who was clinging to the chain with both hands, after he had ineffectually tried to reach the signal wire, allowed the kettle to become steady, and then got hold of the wire and signalled

and was drawn to the surface. In the meantime all the shots that had been lighted in the bottom exploded. A descent was made immediately, but the men were all dead.

The immediate cause of the accident was the swinging of the kettle; had there been nothing for it to catch this might have led to no fatal result. One of two precautions might have been taken: first, cleading the the buntons with sliding deals, or, second, fitting the kettle with a rider sliding in guides. There is nothing in the Coal Mines Act rendering either of these courses obligatory. The space traversed by the kettle was unusually large, 7 feet 10 inches by 11 feet, as large as the full size of many shafts. Since the accident a rider has been added as shown on plate II.

This rider is of somewhat different construction to that figured in my report for last year in connexion with two fatal accidents at Newbattle Colliery, one of which was caused by the rider sticking on the guides and then falling away. At Kelty the lugs are placed on the opposite sides of the rider so as to balance it better.

Sinkers in Scotland when ascending and descending almost invariably stand on the rim of the kettle; this is not the safest position.

No. 37, Appendix A.—The deceased were engaged putting in and repairing slides in the lower portion of a shaft which had recently been extended to reach a lower seam. The operations were carried on during the night shift, the shaft being used during the day shift for raising coal from the upper seam.

They descended in the dip cage to the Main Coal, where they transferred their tools, &c. to a scaffold which lay upon the plates, and which was attached to a crane rope which hung in the rise winding space, and was worked by a double powered crane situated on the pit bank. The crane was in charge of the night shift pit-headman, who, when working with it, was assisted by the winding engineman. Having prepared the scaffold, the shaftmen signalled to "heave the crane," which was then standing as shown on plate 3 in the single power. The cranemen took in the slack rope and raised the scaffold, which was swung into the shaft. The shaftmen appear then to have got upon the scaffold and to have signalled to have it raised a short distance further. The cranemen endeavoured to heave up, but, finding that the load was too heavy for the single power, they proceeded to shift the gearing into the double power. To do this, it was necessary to raise the keeper A B. which hinged on B., and to move the crank shaft laterally, so that the pinion C. might gear into the spur wheel D. One of the men held up the keeper while the other pulled the shaft towards him; but as the pinion and spur wheel entered into gear, the friction caused the shaft to stick. He shook the crank, when the pinion slipped through the spur wheel, thus throwing the crane entirely out of gear, and the load ran away. An ineffectual attempt was made to brake the crane with a piece of timber, which lay at hand. The scaffold with the three men upon it fell to the Virtuewell coal, a distance of 39 fathoms, and the wire rope was wrenched off the crane barrel and went down upon them. They appeared to have been killed instantaneously.

The crane had been in use elsewhere for a considerable time, and only a week prior to the accident had been taken down and re-erected at this pit by the colliery engineer, who considered it was in good working order. The day shift pit-headman used it on the night before the accident; he examined it and thought it was in safe condition. The night shift pit-headman did not examine it, as he followed the day shift without any interval. Neither he nor the engineman had had much experience in crane work.

The accident was directly due to their having attempted to shift the gearing while the load was on the crane. Had they had more experience in such work, they would not have done so without first locking the crane by spragging or otherwise. The crane, however, was seriously defective in construction, and should not have been used for raising or lowering men until altered so as to render such an accident impossible. This could readily have been done by fitting a collar upon the crank shaft—as shown in dotted lines at E.—in such a position that it would bear against the left side frame of the crane before the pinion C. could pass out of gearing with D.

No. 46, Appendix A.—This accident happened at a mid-working, 12 fathoms from the bottom of the shaft, and was caused by the cage being raised a few feet before any signal had been given, and before the loaded hutches had been placed on it. There was only one other person besides deceased at the shaft at the time, and he stated that deceased pushed the two empty hutches (which stood end to end on the single deck of the cage) through the cage, and then turned back to bring forward the full hutches, and as he was getting off the cage it

slowly ascended as far as the door heads, and deceased was thrown off and fell back into the shaft. The engineman did not dispute the fact of the cage moving away as it did without signal. He stated that he placed the cage at the mid-working, and kept it there with the steam shut off at the throttle valve, the brake on, and the engines in position for raising it to the surface. He thought some steam had passed the throttle valve and caused the cage to rise. The manager was of opinion that the engineman had left a little steam on to assist in keeping the cage steady, while the full hutches were being put on, and this steam had overcome the brake. There were no shuts in use at the mid-working, nor would I recommend their use in such situations. Deceased could have passed right through the cage after pushing off the empty hutches, and returned by a road at the side of the shaft.

No. 54, Appendix A.—This fatality was caused by the breaking of a hemp rope $1\frac{1}{16}$ inch in diameter. Deceased and another man were repairing a coal drawing shaft, and were working from one of the cages; a fall took place from the sides of the shaft at the point where they were engaged and jammed the cage. Fearing a further fall they climbed up the shaft a few feet to a lodgment, where they were comparatively safe. When their situation was discovered, an old crane rope hanging in the winding engine house was taken down a mine extending from the surface, and by which the shaft could be reached at the Eight Feet seam, a point about 9 fathoms above the lodgement. The rope was lowered down the shaft from the Eight Feet seam and deceased got on to it, and several persons were prepared to haul him up, when it broke near the seam, and deceased fell about 18 fathoms to the bottom of the shaft. The engineman of the winding-engine, who may be said to have handed over the rope for use on this occasion, stated that it was brought to the pit in July 1892, but was not then a new rope, it was then used on a crane, and afterwards lay for some time in a cabin, until about 18 months before the accident, when he coiled it up, and hung it on a screen in the engine-house. The rope was evidently unfit for use, and broke with a man's weight. The breaking strain, when new, would be about three tons. The manager of the colliery was unable to state the age of the rope, or the maker's name.

No. 63, Appendix A.—This accident apparently arose through a mistake in signalling. Deceased removed a loaded hutch from the cage at the surface, and after moving it about 8 yards from the shaft, he pushed forward an empty hutch into the shaft expecting the cage was still there, but in the interval, the engineman had lowered the cage, and deceased and the empty hutch fell into the open shaft. No one saw the accident happen. The engineman stated that he got a signal from the pithead that all was right before he lowered the cage. The fence guarding the top of the shaft was a door, which was opened and shut by hand, There was no reason, however, why a cover worked by the cage should not have been in use and this would have prevented the accident.

Miscellaneous Underground.—Under this head there were nine accidents, each causing the loss of one life, a reduction of five accidents and deaths as compared with the previous year. Two were by gunpowder, five on inclined and engine planes, three by trams and tubs, and one by suffocation by steam. These accidents will be shortly described in the order of their occurrence.

No. 6, Appendix A.—Deceased who was a pony driver, had come outbye with a loaded tub. On reaching the lye, in which three loaded tubs already stood, he stooped to unhook the tail chain, when his head was jammed between the moving and standing tubs. His skull and jaw bone were fractured.

No. 9, Appendix A.—No one saw this accident happen, but as the body of deceased was found lying across the rails in front of the loaded hutch he was bringing from the face to the shaft, one of the wheels of the hutch being against his neck, there can be no doubt it was caused by the dangerous practice of drawing in front of the hutch, a practice which is now prohibited by one of the new Special Rules established last year, and which it is expected will put an end to this class of accident. The loaded hutch in this case weighed in all about 10 cwt., the inclination of the road at the place where deceased was found was slight, dipping about 1 in 40 to the shaft. There was no snibble in use.

No. 10, Appendix A.—A pump placed 130 yards down a dook extending from the upcast shaft was supplied with steam at a pressue of 65 to 70 lbs. per square inch, passing from the shaft bottom down the dook through wrought-iron pipes of $2\frac{3}{4}$ inches internal diameter. The ends of the steam pipes were fitted with cast-iron flanges, provided with four bolt holes, and with an india-rubber weaze formed the joints. A portion of one of the

weazes was blown out at a joint about 80 yards down the dook, and allowed steam to escape. The dook was a return air-way, and consequently the escaping steam was carried to the shaft, and did not affect the engineman who was in attendance at the pump. He, however, found the pump was not getting steam, and he ascended the dook to discover the cause, which he found to be the burst joint; he was either unable to pass it, or did not think it prudent to attempt to do so, and returned to the pump. The pit was not at work at the time, and the escape of steam was not observed by any other person, although the boiler fireman on the surface noticed he had a difficulty in keeping up the steam. Deceased came to the pit to relieve the engineman at the pump, and was lowered down the shaft, but as his partner did not shortly afterwards signal to ascend, it was feared something was amiss, and the boiler fireman went down the pit and found steam coming up the dook. The under manager and others were sent for, the steam at the surface was shut off, and deceased was found dead about 30 yards down the dook. An oil can he carried was found further down, and it appeared that he had attempted to pass through the steam, but finding himself unable to do so, had retraced his steps. The pipes had been examined on the day of the accident by a competent person, and no defect observed. Had any means of signalling existed between the pump and the surface the engineman at the pump could have signalled for the steam to be cut off. Deceased, on finding steam escaping up the dook, should have returned to the surface and had the steam cut off before attempting to descend the dook. There was a valve near the shaft bottom by which the steam might have been cut off, but it was not in working order.

No. 14, Appendix A.—Deceased was hanger-on at the foot of a cut chain brae, which was 40 yards in length, and had an average gradient of one in eight. He had hung on a tub on the left side road, had signalled it away, and stood leaning upon its right front corner in readiness to guide it from the plates on to the rails. When the loaded tub was pushed over at braehead, the empty one started somewhat suddenly, and deceased slipped and fell in front of it. It struck him upon the stomach and dragged him a short distance up the brae. He sustained severe internal injuries, and died about two hours afterwards.

No. 18, Appendix A.—Deceased was one of several miners who had contracted to drive a cross-cut mine 8 feet by 6 feet in height, with a rising gradient of 1 in $2\frac{1}{2}$. The only witness of the accident, a miner who was directly employed by deceased, stated that Kerr had placed a quantity of gunpowder in the shot hole, and was pushing in a paper wadding with a pick shaft, when the charge exploded. He was found laying about 5 yards back from the face of the mine; the left side of his face had been smashed in, his left hand was shattered, and the head of a steel jumper was embedded in the inner side of his right thigh. He died about 20 minutes after the accident, without having regained consciousness.

The shot which caused the accident was a "lifting" one, bored horizontally near the pavement, and close to the right side of the mine. From the manner in which it had done its work, it appeared to have been well stemmed. For some time prior to the accident, all the shot holes had been bored with a machine, charged with gunpowder made up into cartridges, and were usually fired by means of Bickford's patent fuse. The jumper referred to was 3 feet 4 inches in length, made of 1 inch octagonal steel. Its cutting edge did not appear to have been used against any hard substance since it was last sharpened.

From the work done by the shot, the nature of deceased's injuries, and the condition and relative positions in which the tools were found, Mr. Johnstone, the inspector assisting, who investigated the accident, concluded that the statement of the witness referred to was inaccurate; that deceased had been kneeling on his right knee in front of the shot, and boring out the stemming with the jumper referred to, using it as a "churner," when the charge exploded. The unramming of a shot is expressly forbidden by General Rule 12 (*e*).

No. 21, Appendix A.—This accident occurred through deceased falling in front of a rake of 32 loaded tubs moving towards the shaft at a speed of about six miles an hour. The system of haulage was main and tail rope. Deceased, who was sitting on the first tub, was about to detach the main rope from the rake, by pulling out a pin and allowing the rope to go free. In stooping down to do so he overbalanced himself and fell in front of the moving tubs.

No. 22, Appendix A.—This accident was caused by the accidental ignition of loose gunpowder with which a shot hole in the brushing of a long wall road was being charged. The mouth of the hole was about 5 feet from the pavement, and the hole was nearly level; it was

$2\frac{1}{2}$ in. diameter and 2 ft. deep. Two men were in the place, one of whom was charging the hole by means of a scoot made of wood and zinc, while the other was laying aside the boring machine; the former was so injured by the explosion that he died two days after; the latter escaped with little injury. Neither of the men could say how the gunpowder was ignited; it appeared that the brusher charging the hole had his lighted open lamp on his bonnet at the time, although he had taken the precaution of trimming it before he commenced charging the hole, so as to avoid sparking. About 2 lbs. of gunpowder had been introduced into the hole. It seems probable that this gunpowder had been ignited by the flame of the lamp, or by a spark therefrom; the gunpowder remaining in the canister was not ignited. Deceased should not have had his lamp in his bonnet while charging a shot-hole, but should have placed it at a safe distance, and this is now made compulsory by one of the new Special Rules.

No. 38, Appendix A.—Deceased was acting temporarily as a hanger-on at the head of an engine dook, which has a dip of 1 in 2, and on which the tubs are drawn by two endless ropes, to which they are attached singly at intervals of about 20 yards. One rope passes along each side of the tubs, and each tub is attached to the ropes by four horns, one at each of its corners.

A tub loaded with bricks was being sent down the dook, and owing probably to the horn on one side catching the rope slightly in advance of that on the other, the tub went over on the dook with the left front horn twisted too far back. Deceased signalled to stop the engine, and going down after the tub for a distance of about 8 yards, he knocked the outer side of the horn forward with a brick. Observing that the right front horn had also become twisted, he crossed in front of the tub to put it right, and while doing so the ropes slipped through the horns and the tub ran away, driving him down the dook before it, and crushing him against the next tub. His back, left thigh, and several ribs were fractured, and he died in a few moments without having regained consciousness.

The accident was evidently due to want of caution on the part of deceased. It was exceedingly rash to attempt to shift the grip of the horn which apparently was carrying most of the load, more especially while standing directly below the tub.

No. 44, Appendix A.—This accident was caused by an ascending empty carriage overtaking deceased while proceeding up a brake incline to his work. The incline was worked by a back balance and a carriage which ran on rails laid on the inclination of the seam, which varied from 1 in 2 to 1 in 6. The carriage held one tub, and weighed about 15 cwts. Repairs had been going on at a bench some distance up the incline, and the carriage was being raised from the foot of the incline to ascertain if the bench was properly adjusted. When the carriage began to move, deceased and another workman were a few yards up, and they attempted to reach the first manhole, but were caught by the rope, which, owing to the varying inclination of the seam, surged toward the roof, and the carriage overtook and passed partly over deceased. He died from the shock to his system eight hours after the accident. A distinct travelling way was provided, and was largely taken advantage of by the miners in the section, who, however, were not prevented using the incline (which was provided with manholes), although requested not to do so.

No. 51, Appendix A.—Deceased was struck by a runaway tub, on a cut chain brae 50 yards long and with an inclination of 1 in $1\frac{1}{2}$; there were three working benches on it. Deceased, who worked at the middle bench, missed his turn to run his tub, and the chainman prepared to run one from the top bench. All was ready, except that the chain required to be connected, when deceased came out to his bench, placed his tub in position on the incline, and asked the chainman to run it. The chainman agreed, and proceeded to remove the tub he had ready at the top bench, while doing so it caught against the rail on the opposite side and ran amain down the incline. Deceased was then on the incline at his bench, and the tub in its descent struck him, knocking him down to the next bench, a distance of 40 feet.

No. 61, Appendix A.—Deceased, who was a pony driver, was coming outbye with a set of nine loaded tubs, on a horse road which had a slightly varying gradient. The last tub carried a snibble, and on reaching a point where the dip outbye increased somewhat, deceased jumped off the set, and inserted three others in the wheels of the first three tubs as they passed him. He had then passed alongside, or had climbed over the top of the tubs, and had reached the front of the set, when, owing possibly to his head having come in contact with a crown, he fell in front of the set. The back of his head came against a prop which stood at the left side of the road, and the set buffered against his chest. The accident was discovered very shortly afterwards. His left leg was broken, but death was reported to have been due to suffocation.

Above ground.—There were nine fatal accidents, and nine deaths, as compared with eight in the preceding year.

All the nine accidents were at the pit, and none were reported on private branch railways, &c. which latter class of accident is in future to be included in the summaries as ordinary mining accidents, although previous to the year 1893 they were classified separately. Of the surface accidents, two were by machinery, four by waggons, and three of a miscellaneous character.

No. 1, Appendix A.—Deceased was employed as a dirt picker at a coal screen. He was going up to the pithead scaffold to commence work for the day, and instead of ascending by the trap stair, he went up by the screen. When stepping off the corner of a truck to climb a short vertical ladder, in order to reach the picking table, he missed his grip, his foot slipped off the truck, and he fell upon his shoulders on the rail. His injuries were not at first considered to be severe, but it subsequently transpired that his back had been broken. He succumbed to his injuries about three months after the accident on 11 August 1893. Although death resulted in 1893, I did not receive notice of it until January 1894. Each year along, with the form for the annual return of quantity of mineral raised and persons employed, a form for stating the number of days lost through non-fatal accidents is sent out, and it appeared that the manager of the colliery was not aware of the young man's death until he then made inquiries under this head.

No. 8, Appendix A.—This accident was caused by a pin in a moving pump rod crushing deceased while he was engaged claying the joints of the landing box.

The shaft is divided into four compartments, two in the centre for cages, and those at the ends for pumps. In the dip end there are two plunger lifts, 15 inches diameter, forcing to the surface, and in the rise end one bucket lift, 15 inches diameter, raising to the surface. On the bucket rod, near the top, was an iron pin projecting $6\frac{1}{2}$ inches on each side, to which a sling chain was attached when lowering the rods for the purpose of changing the bucket.

On the morning of the accident it was discovered that the landing box of the bucket lift was leaking, and deceased, together with the oversman of the pit, went into the "well" and commenced to clay up the parts which leaked, while the pump was in motion. While thus engaged the iron pin on the bucket rod caught deceased's head, during the down stroke, and crushed it against the side of the landing box, breaking the skull above the right eye. He succumbed to the injury 11 days after the accident.

Deceased had been employed at the pit for many years, and was acquainted with all the details of the pumps and machinery on the surface. He was aware of the pin in the rod, but evidently in his anxiety to stop the leakage he had forgotten about it.

No. 29, Appendix A.—Deceased, who was a blacksmith at the colliery, was assisting to put on a cage at a pit where the winding apparatus had been out of use for some years. The cage having been connected to the rope was drawn in and raised until its bottom hung about two feet above a scaffold, which covered the mouth of the shaft. The engineman then shut the throttle valve, pinned down the brake lever, and went outside to render what assistance he could. Deceased went on the cage, and tried to spring the slides sufficiently to permit of the guides entering, but finding that the scaffold referred to prevented this, he suggested that the cage should be raised a short distance further. The engineman went in to do this, deceased meantime remaining on the cage. The engineman slightly opened the throttle valve, and eased the brake, when the engine at once started off, and before he could stop it the cage had been pulled up to the pulley, on striking which it swerved, lifted the rope out of the groove and fell to the ground behind the frame. Deceased jumped or fell from it, receiving severe internal injuries, from which he succumbed two days afterwards.

The accident was probably due to the steam pipes and passages between the throttle valve and the pistons having become filled with steam at considerable pressure, the expansive force of which, on the removal of the brake, was sufficient to cause the engine to jerk the light cage up against the pulley. It might have been avoided had greater care been exercised in the admission of the steam, and the removal of the brake.

No. 34, Appendix A.—This accident was caused by using a pit prop 5 feet long to sprag a ballast waggon on the colliery sidings. It happened in the usual way as it has so frequently happened before; the prop not inserted far enough swung round and threw deceased under the wheels of the waggon following. The train consisted of 12 ballast waggons owned by the North British Railway Company, which after having being loaded with ashes at the pit, were being taken by the colliery locomotive to Wemyss Castle Station. They were being led over the line used for bringing the empty waggons forward to the pit. The brakes of six of these waggons were defective.

The spokes of the wheels of the Fife Coal Company's waggons are covered with a plate, so that spragging these waggons is not possible, and in any case spragging was ordinarily not required on the line of rails over which the train was passing. These facts may account for the want of proper sprags. The practice of using anything but a proper sprag for spragging railway waggons is now prohibited by one of the new Special Rules.

No. 48, Appendix A.—Deceased was engaged scraping and painting an auxiliary pithead frame, which carried a single pulley. He had been warned not to attempt to paint the portions near to the pulley while winding operations were being carried on; but, unobserved by anyone, he had climbed the right backstay and commenced to paint the top of the frame. Taking advantage of a momentary cessation of the winding, he was reaching through between the spokes of the pulley and painting the inner side of the left upright when the engineman, in obedience to a signal from pit bottom, lifted a loaded cage. The pulley in revolving caught deceased's head and shoulders, which were drawn in and severely crushed between the pulley spoke and the right upright. One of the pitheadmen observed him at the moment, the engineman was signalled to and stopped the engine at once, but the load causing it to ease slightly backwards deceased's head was relieved, and he fell, alighting on his back on the corner of a tub. He died three days afterwards.

No. 55, Appendix A.—Deceased was assisting a driver to empty some end-tipping waggons at the end of an embankment. As the tip had just been extended, the driver wished to run at his horse's head, in order to guide it past the point at which it had been accustomed to turn aside, and deceased was running alongside of the horse in order to detach the slip coupling behind the swingle-tree. When about to slip the coupling he tripped over a sleeper or slipped on the rail, and fell in front of the waggon. The driver at once turned the horse aside, and slipped the coupling, but before deceased could get clear the leading wheel of the waggon passed over both of his legs, and the rear wheel dragged him along for several yards. Amputation of both legs was found to be necessary. He succumbed two days afterwards.

No. 60, Appendix A.—This accident was caused by deceased falling along with a hutch full of coal from the level of the pithead to a travelling belt a few feet below. Deceased and another runner were about to empty the hutch of coal, one opening the door at one end of the hutch and the other inclining it on a tippler, but before the door was opened deceased had tipped up the hutch, and it fell off the tippler on to the belt below, dragging deceased with it, and he was found with one of the buffers of the hutch pressing on his breast. There were two devices for keeping the hutch on the tippler when it was inclined: (1) the ends of the rails were turned up, and (2) a hook caught the leading axle of the hutch; the day before the accident this hook had been broken off, and it appeared that if the door was not opened the weight of coals added to the weight of the hutch dragged the hutch off the tippler, but with a little extra care there was no difficulty in emptying the hutch safely without the hook on the tippler.

No. 58, Appendix A.—Deceased was endeavouring to move forward a waggon loaded with dross by means of a pinch applied to one of its hind wheels, when a locomotive engine belonging to the Caledonian Railway Company, on whose system the colliery is situated, backed some waggons on the same line of rails and caused the waggon of dross to run on to deceased. The guard of the Caledonian engine was standing on a waggon of coal directing operations, and he had not noticed that deceased was engaged on the line of rails on which the shunting was being performed. The line of rails was in connexion with a brick works owned by the colliery company, and deceased was usually employed working an engine that hauled bricks from the kilns to the brick screen, but as he was sometimes employed on the colliery sidings moving trucks of coal, and as he was so employed when he met his death, I have included the case as a colliery accident.

No. 62, Appendix A.—Deceased, who was the only female that lost her life about the mines in the district during the year, was employed carrying prop wood from the wood yard to the shaft, and while so engaged she had to cross the main branch line and other lines of rails in connexion with the screens. She and another girl had been engaged during the morning carrying wood, and when returning to the wood yard from the shaft were met by a train of empty waggons, which were being pushed forward by a locomotive engine just as they emerged from under the pithead scaffold; before they could get clear of the rails they were struck by the leading waggon and deceased was run over. The shunter, who was on the buffer of the leading waggon, saw the girls approach from under the scaffold and shouted to them, and at the same time gave the signal to the engine-driver to stop the train; but it was

too late to avert the accident. The girls were absorbed in conversation, and not sufficiently on the alert, or they would have seen the train approaching.

The system of conveying prop wood by means of carrying it across the lines of rails while work is in operation is objectionable.

Part V.

Deaths reported but not classed as Accidents under the Coal Mines Regulation Act.

In addition to the fatal accidents in and about the mines, and on private branch railways, &c. to the persons employed (Appendix A.), there were seven other fatalities reported, and which are described in Appendix B., but which are not classed as accidents under the Coal Mines Act. This list comprises the sudden death of a collier while at work underground; the death of a schoolgirl resulting from injuries received by waggons on a colliery railway; the death of a drawer stated to be due to inflammation of the kidneys, and occurring soon after he had received injury to his hand in the pit; the death of a collier who, after receiving his wages, loitered about the colliery sidings and was crushed between two waggons; the death of a schoolboy from suffocation by choke-damp in a steep incline from the surface, into which he had ventured by the ladders with which it was fitted—the colliery was in the hands of a liquidator and was not working, and no ventilation was kept up, the top of the incline was fenced, but not in such a manner as to offer any difficulty to any person getting on to the ladders; the death of a schoolboy by a fall of roof in a small opening into the Ell Coal seam at the outcrop by miners on strike; and lastly, the death of a boy employed as a trapper underground, who, after his shift was over, was playing about the pit bank, and while crossing between the moving fly-wheel and spur-wheel of a small redd haulage engine slipped and fell on to the spur gearing and was instantly killed.

Part VI.

Non-Fatal Accidents at Mines under the Coal Mines Regulation Act.

Three hundred and six non-fatal accidents, causing injury to 322 persons, were reported, and are described in Appendix C.

Tables VIII. and IX. give additional particulars respecting the non-fatal explosions of fire-damp and of explosives, including the fatal cases.

The cause of ignition in the fire-damp explosions was in every case a naked light. None of the explosions were complicated by coal dust. Ten occurred in oil shale mines and 19 in collieries.

I am glad to notice a reduction in the number of explosions at the Pentland oil shale mines; five only were reported last year, as against 13 in 1893. One of these, No. 8 in Table VIII., was followed by a prosecution of the injured fireman. (*See* Prosecution 19, Table X.)

The list of blasting accidents shows in five cases the danger arising from handling explosives with an open light stuck on the cap. This practice is now forbidden by Special Rule, but I find that some prosecutions will be necessary before it is stamped out.

Eight accidents took place in connexion with the firing of two or more shots in the same place at the same time.

No. 13 in the list was caused by an act of gross carelessness on the part of one of the sinking contractors, and it is difficult to understand how the three injured persons escaped with their lives. Several shots charged with gelignite were ready for firing by electricity in the bottom of a sinking pit in whinstone, the sinking contractor, thinking all the sinkers had ascended, turned on the current while three of them were still in the bottom. All the shots exploded, but singularly enough the men were not very seriously injured. The sinking contractor was charged with a breach of one of the Special Rules for sinking pits, which reads as follows :—"The leading sinker shall allow no shots to be fired except under his super-"vision, nor until the kettle is conveniently placed and a signal has been given from the "surface that the engineman is in perfect readiness to draw away; and after a missed shot, "no one shall enter the pit until 30 minutes shall have elapsed" (Prosecution 23, Table).

The charge was not sustained, as the rule is evidently framed to meet the case of shots fired by fuse, and besides would only apply to the leading sinker, and not to any other person. In order to prevent the possibility of a similar accident, it was arranged that the leading sinker should in future keep the key of the battery in his pocket, and always ascend on the last kettle before shots were fired.

List of Explosions of Fire-Damp.

Table VIII.

Number.	Date.	Hour.	Mine.	Seam.	Occupation of Persons killed or injured.	Class of Working.	Barometer. Height at Glasgow* Observatory.	Barometer. R. Rising. F. Falling.	Persons injured.	Persons killed.
1	Jan. 5	12 0 noon	Blairhall - - -	Main Coal - -	Borers -	Close place -	29·760	F.	2	—
2	„ 22	10 0 AM	Bog - - -	„ - -	Fireman & driver	„ -	29·049	F.	2	—
3	Feb. 19	7 30 AM	Pentland - - -	Dunnett's Oil Shale -	Miner -	Upset -	30·205	R.	1	—
4	„ 28	10 0 AM	Forkneuk - - -	Broxburn Oil Shale -	„ -	Close place -	29·407	R.	1	—
5	Mar. 14	7 0 PM	Kinneil - - -	Six Feet Coal - -	Drawer -	„ -	29·129	R.	1	—
6	„ 30	2 10 PM	„ - - -	Main Coal - -	Miner - -	„ -	29·571	F.	1	—
7	April 30	6 30 AM	Pentland - - -	Dunnett's Oil Shale -	Contractor -	Upset -	29·982	R.	1	—
8	May 8	11 0 PM	„ - - -	Broxburn Oil Shale -	Fireman -	„ -	29·416	R.	1	—
9	„ 10	8 0 AM	Birkrigg - - -	Lower Drumgray Coal	„ -	Dook road -	29·221	F.	1	—
10	„ 17	7 30 PM	Rawyards - - -	Virtuewell Coal -	„ -	Long-wall -	30·183	R.	1	—
11	June 8	6 45 AM	Prestongrange - - -	Jewell Coal - -	Miner -	Upset -	29·705	R.	1	—
12	„ 12	6 50 AM	Pentland - - -	Dunnett's Oil Shale -	„ -	„ -	29·676	R.	1	—
13	„ 14	6 30 AM	Seafield - - -	Fells Oil Shale -	„ -	„ -	29·910	R.	1	—
14	„ 15	5 50 AM	Springbank -	Lower Drumgray Coal	Brusher -	Long-wall -	29·731	F.	1	—
15	„ 25	3 0 PM	Knownoble - - -	Main Coal - -	Miner - -	Close place -	29·934	R.	1	—
16	July 10	7 20 AM	Blairhall - - -	„ - -	Oversman -	„ -	29·346	F.	1	—
17	Aug. 31	7 45 AM	Pentland - - -	Broxburn Oil Shale -	Miner - -	Long-wall -	29·881	R.	1	—
18	Sep. 27	2 0 AM	Monkland - - -	Crosscut Mine from Lower to Upper Drumgray Coal -	„ -	Stone mine -	29·937	R.	1	—
19	Oct. 10	10 0 AM	Bog - - -	Main Coal - -	Oversman -	Close place -	29·829	R.	1	—
20	„ 11	7 0 AM	Pumpherston - - -	Upper Oil Shale -	Miner -	Upset -	30·019	R.	1	—
21	„ 19	7 0 AM	Monkland - - -	Upper Drumgray Coal	„ -	Long-wall -	29·581	R.	1	—
22	„ 24	3 30 PM	Polbeth - - -	Broxburn Oil Shale -	Drawer and miner	Haulage road	28·645	F.	2	—
23	„ 25	11 0 PM	Blairhall - - -	Main Coal - -	Brusher -	Long-wall -	28·891	R.	—	1
24	Nov. 6	8 0 AM	Skellyton - - -	Virtuewell Coal -	Miner -	„ -	29·718	R.	1	—
25	Dec. 6	7 30 AM	Newbattle - - -	Parrot Coal - -	„ -	„ -	29·684	R.	1	—
26	„ 18	4 45 AM	Oakbank - - -	McLean Oil Shale -	Fireman -	Stooping -	28·940	F.	1	—
27	„ 20	5 30 PM	Rawyards - - -	Virtuewell Coal -	Miners -	Drawing road	29·922	F.	2	—
28	„ 21	6 30 AM	Cornsilloch - - -	Ell Coal - - -	Miner -	Upset -	29·648	R.	1	—
29	„ 22	3 40 AM	Avonhead - - -	Upper Drumgray Coal	„ -	Long-wall -	28·145	F.	1	—
									32	1

* Add ·205 to reduce to mean sea level.

List of Explosions of Gunpowder, &c.

Table IX.

No.	Mine.	Explosives used.	Persons killed.	Persons injured.	Cause of Accident.
1	Bankend - -	Gunpowder -	—	1	Two miners ignited the fuse of two shots in the same place, they retired, thinking only one had kindled and after one shot exploded, the injured man returned when second shot exploded.

No.	Mine.	Explosives used.	Persons killed.	Persons injured.	Cause of Accident.
2	Roman Camp -	Gunpowder -	—	1	Two shots ready for firing in same place. The fuse of one was ignited, and after it exploded a return was made to ignite fuse of other shot when it exploded.
3	" -	" -	—	2	Two miners igniting the fuse of four shots not far apart allowed them to explode before retiring.
4	Bankend - -	" -	—	1	Two miners ignited the fuses of two shots in the same place, they retired thinking only one had kindled, and after one shot had exploded, the injured man returned, when second shot exploded.
5	Fifeshire Main - -	" -	—	1	While inserting cartridge into hole with open lamp on bonnet some gas was ignited and caused powder to explode.
6	Monkland - - -	Detonator - -	—	1	Found detonator on surface and picked it with pin in pit causing it to explode.
7	Newbattle - - -	Gunpowder -	1	—	Supposed to have been unramming shot.
8	Binniehill - - -	" -	1	1	While charging hole with loose powder and with open lamp on bonnet it exploded.
9	Haywood - -	" -	—	1	While removing lid of cartridge cannister spark from open lamp in bonnet fell into it.
10	Broxburn - -	" -	—	1	Two shots ready for firing in same place. Either (1) only one fuse was ignited, and the explosion of the shot ignited fuse of other shot, or (2) both fuses were ignited by miner and one was thought to have missed.
11	Monkland - -	Blasting gelatine -	—	1	Premature explosion of shot due to defective fuse.
12	Pentland - - -	Gunpowder -	—	1	Struck by blaes projected by shot; did not retire far enough.
13	Kelty - - -	Gelignite - -	—	3	Contractor turned current on to electrically fired shots while the injured men were in bottom of sinking pit.
14	Philpstoun - -	Gunpowder -	—	1	Adjusting cartridge with open lamp in bonnet.
15	Cobbinshaw - -	" -	—	1	Spark from open lamp in bonnet fell on to cartridge he was carrying.
16	Pumpherston - -	" -	—	1	Three shots ready to fire in same place. Fuse of one ignited, and on return a second shot exploded.
17	Roman Camp - -	" -	—	1	Two shots ready for firing in same place. Lit fuse of one and applied light to fuse of other, but thought it did not ignite, and after one shot exploded returned to place, when the second went off.

No.	Mine.	Explosives used.	Persons killed.	Persons injured.	Cause of Accident.
18	Benhar	Gelatine dynamite	—	1	Two shots of gelatine dynamite ready to fire in same working by two brushers; either (1) only fuse of one shot was lit and the explosion of this shot ignited fuse of other, or (2) both fuses were lit and one thought to have missed fire. On returning after one shot exploded the other went off.
19	Appin	Gunpowder	—	1	While igniting slow match attached to squib shot exploded.
		Total	2	21	

Part VII.

Prosecutions under the Coal Mines Regulation Act.

Table X. is a list of prosecutions under the Coal Mines Regulation Act, and Special Rules founded thereon, in the district during the past year.

Table X.

No.	Date of Trial.	Name and Occupation of Person charged.	Place where, and Date when Offence charged with was committed.	Nature of Charge.	Result of Trial.
1	1894. January 10	Daniel McLean, fireman	No. 1, Shale Mine, Philpstoun; 20th November 1893.	Contravention of General Rule 4. Failing to inspect workings with safety lamp, gas having been found within the preceding 12 months.	To enter into recognisance in terms of "The Probation of First Offenders' Act," for six months.
2	January 23	Thomas Connelly, miner	Earnock Colliery; 28th and 29th December 1893.	Contravention of Special Rule 72. Riding on hutches without permission.	Accused pled guilty. Fined 30s. or 21 days.
3	"	Patrick Cairns, miner	Earnock Colliery; 11th January 1894.	Contravention of Special Rule 90. Placing lamp within swing of pick.	Accused pled guilty. Fined 20s. or 14 days.
4	February 2	Robert Dick, coalmaster	Knownoble Colliery; 18th December 1893.	Contravention of Section 16. Employing 10 persons underground with only one shaft.	Accused found guilty. Fined 2l. or 14 days.
5	February 15	William Hodge, miner	Blairadam Colliery; 19th January 1894.	Contravention of General Rule 22 and Special Rule 93. Failing to put up sprags.	Accused found guilty. Fined 10s. or 5 days.
6	"	Henry Hunter, engine keeper.	Nellie Pit, Lochgelly Colliery; 5th February 1894.	Contravention of Special Rules 20 and 32. Failing to remain in charge of and so near his engine as to have it at all times under his control.	Accused pled guilty. Dismissed with an admonition.
7	February 16	William Steven, miner	Earnock Colliery; 1st February 1894.	Contravention of Special Rule 87 (6). In possession of pipe.	Accused pled guilty. Fined 20s. or 14 days.
8	February 21	Francis McMahon, miner	Udston Colliery; 29th January 1894.	Contravention of Special Rule 87 (2). Unlocking safety lamp.	Accused found guilty. Fined 30s. or 21 days.
9	February 27	Angus Hamilton, drawer	Earnock Colliery; 9th February 1894.	Contravention of Special Rule 89. Failure to extinguish light in damaged lamp.	Accused pled guilty. Fined 20s. or 14 days.
10	"	James Donnachie, miner	Clyde Colliery; 15th February 1894.	Contravention of General Rule 12 (d.) Using coal or coal dust for tamping.	" "
11	Febuary 28	Alexander Rigg, manager	No. 1, Pit Manuelrigg. Between 13th November 1893 and 28th January 1894.	Contravention of General Rule 19. Failing to have entrance fenced in working shaft.	Accused found guilty. Fined 20s. or 3 days.
12	March 7	William Neil, brusher	Eddlewood Colliery; 3rd February 1894.	Contravention of Special Rule 87 (6). In possession of pipe.	Accused pled guilty. Fined 30s. or 21 days.
13	March 16	James Coulson, driver	Rosie Colliery; 17th February 1894.	Contravention of Special Rule 72. Riding in hutches without permission of manager.	Accused pled guilty. Fined 10s. or 5 days.
		Neil Coulson, driver	" "	" "	Accused pled guilty. Reprimanded.
		Thomas Stewart, driver	" "	" "	Accused pled guilty. Fined 5s. or 5 days.
		William Thomson, driver	" "	" "	" "

No.	Date of Trial.	Name and Occupation of Person charged.	Place where, and Date when Offence charged with was committed.	Nature of Charge.	Result of Trial.
14	March 20 - -	Francis Andrews, miner -	Earnock Colliery; 26th February 1894.	Contravention of Special Rule 90. Placing safety lamp within swing of pick.	Accused pled guilty. Fined 20s. or 14 days.
15	March 28 - -	George Vanveck, miner -	Levenhall; 2nd March 1894.	Contravention of Section 11 (1).	Admonished.
16	April 6 - -	James Hastie, agent -	Fairhill Colliery; 13th January 1894.	Contravention of Sections 12 and 13. Failure to weigh over 10 cwts., and to pay for actual weight in hutches, and failure to afford facilities to checkweigher in not weighing over 10 cwts.	Sheriff convicted and fined accused 4l, or 7 days; but on appeal the Court of Justiciary recalled this judgment, and assoilzied accused with expenses.
17	April 25 - - -	John Coxon, drawer -	No. 11 Pit, Niddrie Colliery; 9th April 1894.	Contravention of Supplementary Special Rule G.	Accused found guilty. Fined 2s. 6d. or 1 day.
18	May 21 and 28 - -	James Malcolm, manager	No. 14 Pit, Haywood Colliery; 19th March 1894.	Contravention of Section 13 (2). Interference with checkweigher, and preventing him fulfilling his duties.	Accused assoilzied with 12l. 12s. expenses.
19	May 28 - -	Thomas Mash, fireman -	No. 8, Straiton Shale Mine; 8th May 1894.	Contravention of General Rules 4 and 8, and Special Rules 35, 38 and 40.	Accused found guilty. Fined 2l. or 14 days.
20	June 1 - - -	Richard Scarborough, mine bricklayer.	Earnock Colliery; 1st May 1894.	Contravention of General Rule 10 (iv.) In possession of lucifer matches.	Accused pled guilty. Fined 20s. or 14 days.
21	June 11 - -	John Smith, drawer -	Eddlewood Colliery; 5th February 1894.	Contravention of Special Rule 87 (6). In possession of pipe.	Accused pled guilty. Fined 2l. or 30 days.
22	July 13 - - -	William Russell, manager	Woodside Colliery; 12th May 1894.	Contravention of Section 7. Employing boy over 10 hours and after 2 o'clock on Saturday.	Accused pled guilty. Fined 2l. or 14 days.
23	August 8 - -	Archibald Irvine, sinker -	Aitken Pit, Kelty Colliery; 28th June 1894.	Contravention of Special Rule 119, with an alternative charge at common law of culpable negligence.	Statutory charge departed from. Accused tried on common law charge and found guilty. Sentenced to 1 month's imprisonment.
24	November 22 - -	Charles Russell, manager	Blairhall Colliery; 25th October 1894.	Contravention of Section 35. Failing to send notice in writing to Inspector of Mines as to explosion of gas.	Accused pled guilty. Fined 3l. or 10 days.
25	November 30 - -	William Blackley, miner	Earnock Colliery; 22nd November 1894.	Contravention of Special Rule 90. Placing safety lamp within swing of pick.	Accused pled guilty. Fined 20s. or 14 days.
26	December 7 - -	James Baxter, miner -	No. 13 Pit, Niddrie Colliery; 16th November 1894.	Contravention of Special Rule 72.	Accused pled guilty. Fined 5s. or 3 days.
27	December 15 - -	William Taylor, miner -	Earnock Colliery; 3rd December 1894.	Contravention of Special Rule 90. Placing safety lamp within swing of pick.	Accused assoilzied.
28	December 24 - -	Thomas Harvey, miner - } John Harvey, miner - }	No. 11 Pit, Niddrie Colliery; 28th November 1894.	Contravention of General Rule 22 and Special Rule 73.	Admonished.
29	December 26 -	William Scott, fireman -	" " -	Contravention of General Rule 4 and Special Rule 37.	Accused found guilty Fined 10s. or 3 days.

Questions arising under the clauses of the Coal Mines Act relating to the weighing of mineral and the appointment and duties of checkweighers have absorbed, as in past years, a considerable amount of my time, and the results arrived at cannot be considered satisfactory. The object of these clauses is to protect the miner, and to lay down a system so as to avoid disputes; it may be doubted whether this latter object is attained, or, at all events, it is clear that the law as it now stands is not sufficiently definite. These questions are not connected with the safety of mines, the main object of the appointment of Government inspectors, and would have been as well left out of the Mines Act; if, however, they remain, they require to be recast.

At Fairhill Colliery, as at other collieries in the district, a system known as the "standard weight" system is in operation in connexion with the weighing of the coal and the payment of the miners. It may shortly be described as follows: The owner and workmen agree that a hutch containing more than, say, 10 cwt. of coal shall be considered as "improperly filled," and any coal contained in a hutch above the standard weight is neither weighed nor paid for. The checkweigher at Fairhill Colliery complained to me that he was refused facilities for ascertaining the true weight of coal sent up by the miners, by whom he was employed, and as I considered the owner was in any case bound to weigh truly and fully, and afford the checkweigher the necessary facilities for ascertaining the true weight, I asked that the system should be altered to this extent, and on refusal I asked your permission to test the matter before the Courts. I did not ask for the legality of the deduction to be called in

question, as it appeared to me: (1) that the words "improperly filled" might be held to include overloaded hutches; (2) if the miners had the true weight given to them they had facts to go upon for a civil action if they disputed the agreement. You gave your consent for the action to be raised in this form, but Crown Counsel interposed, and, against my wishes, the coalmaster was charged with an offence in not paying for the surplus coal, as well as for not weighing it, and affording the checkweigher facilities for ascertaining the true weight. The sheriff substitute convicted on all points, but, on appeal, the conviction was quashed, although, as will be seen from the report* of the case, the judges differed on the question I specially wished to test.

That there is a limit to the safe loading of a hutch cannot be disputed, and the manager of a colliery must have some power to check overloading. I suggested at the trial that this should be done by special rule, but if the owner can secure the end by making use of the deduction proviso of the weighing clause of the Mines Act, it is a very natural course to take, and I am bound to say that I do not think it is unduly straining the meaning of the words "improperly filled" to apply them to an overloaded hutch; but this does not prevent full and true weighing, and I think it probable that if the action had been limited to the testing of this point it would have been successful.

HIGH COURT OF JUSTICIARY.

Friday, July 13.

(Before the Lord Justice-Clerk, Lord Adam, and Lord Wellwood.)

HASTIE *v.* ATKINSON.

Justiciary Cases.—Mines.—Miner's Wages.—Payment by Weight of Mineral.—Improper Filling.—Standard Weight System.—Validity of Coal Mines Regulation Act, 1887 (50 *&* 51 *Vict. c.* 58.) *sec.* 12.

Section 12 of the Coal Mines Regulation Act, 1887, enacts that where the wages paid to miners depend on the amount of mineral got by them, they shall be paid according to the actual weight got by them of the mineral contracted to be gotten; provided that nothing in this section shall preclude the coal master from agreeing with the miners that deductions shall be made in respect of hutches being improperly filled, such deduction being determined in such special mode as may be agreed upon between the parties.

A coalmaster agreed with his employees that the standard weight system should be adopted in the mines, and that no payment should be made for the excess weight of any hutch beyond 10 cwt., the standard weight.

In a criminal prosecution against the manager of the mine, as the person responsible for the due observance of the Act, *held* that the agreement was valid, and that the failure to weigh hutches loaded beyond 10 cwt., or to pay for the contents of the hutch beyond that amount, was not a contravention of section 12, the deduction from the weight being in respect of improper filling, and thus authorised by the section.

Opinions by the Lord Justice-Clerk and Lord Wellwood that the duty imposed by the statute, apart from agreement, is to weigh the mineral in the hutches, and not the gross contents. *Contra* by Lord Adam.

This was an appeal under section 67 of the Coal Mines Regulation Act, 1887 (incorporating 20 Geo. II. c. 43.) against a conviction and sentence pronounced in the Sheriff Court of Lanarkshire at Hamilton. The complaint upon which the conviction proceeded was at the instance of the respondent, Her Majesty's Inspector of Mines for the Eastern District of Scotland, and charged the appellant, the manager of the Fairhill Colliery, with contraventions of sections 12 and 13 of the same statute.

Section 12 is in the following terms:—"12 (1). Where the amount of wages paid "to any of the persons employed in a mine depends on the amount of mineral gotten "by them, those persons shall be paid according to the actual weight gotten by them "of the mineral contracted to be gotten, and the mineral gotten by them shall be truly "weighed at a place as near to the pit mouth as is reasonably practicable: Provided that "nothing in this section shall preclude the owner, agent, or manager of the mine from "agreeing with the persons employed in the mine that deductions shall be made in respect "of stones or substances other than the mineral contracted to be gotten, which shall be "sent out of the mine with the mineral contracted to be gotten, or in respect of any tubs, "baskets, or hutches being improperly filled in those cases where they are filled by the "getter of the mineral, or his drawer, or by the person immediately employed by him;

* The Scottish Law Reporter, Vol. xxxi., p. 892.

" such deductions being determined in such special mode as may be agreed upon between " the owner, agent, or manager of the mine on the one hand, and the persons employed " in the mine on the other, or by some person appointed in that behalf by the owner, agent, " or manager, or (if any checkweigher is stationed for this purpose, as herein-after mentioned) " by such person and such checkweigher, or in case of difference, by a third person to be " mutually agreed on by the owner, agent, or manager of the mine on the one hand, and the " persons employed in the mine on the other, or in default of agreement, appointed by a " chairman of a court of Quarter Sessions within the jurisdiction of which any shaft of the " mine is situate."

Section 13 imposes a penalty upon the owner or manager of the mine in the event of his refusing facilities to the checkweigher appointed by the miners to ascertain the true weight of the coal sent up. At the pit in question it was the practice to ascertain the true weight of all hutches not exceeding 10 cwt., and to pay according to the actual weight, but if the hutch exceeded 10 cwt. to pay upon 10 cwt. only. It was thus unnecessary to ascertain the true weight of hutches beyond 10 cwt., and in practice this was not done. This system of a maximum load, beyond which no weight is ascertained or paid for, is known as the standard weight system. It was proved that the miners named in the complaint had agreed to the adoption of this system, and that the standard weight should be 10 cwt.

The complaint proceeded on this footing, that the standard system was illegal and that there was a contravention of the statute in every case in which the mineral in the hutch exceeded the maximum of 10 cwt., and was not truly weighed and paid for. Four specific charges were libelled under section 12, and the facts set forth (as regards one charge) were that the appellant, as manager of the Fairhill Colliery, had on the occasion specified failed to pay to Buchan Littlejohn, one of the miners employed in pit No. 2, " according to the actual " weight of coal, being the mineral contracted to be gotten " by him, " in so far as (*c*) the " said Buchan Littlejohn, having on said 27th December 1893, filled and despatched to the " pithead of No. 2 pit of said colliery a hutch containing $10\frac{3}{4}$ cwts. of coal, the said James " Hastie did on said 13th January 1894 fail to pay the said Buchan Littlejohn according to " the actual weight of $10\frac{3}{4}$ cwt. of coal contained in said hutch, and did only pay him for " 10 cwt., whereby he suffered a loss in wages to the amount of $1\frac{1}{2}d.$ or thereby, " and this the said James Hastie did contrary to the Act 50 and 51 Vict. cap. 58, " sec. 12 (1)."

It was not disputed that in this case, and in the others libelled, the usual practice had been followed, and that it having been ascertained that the weight of the hutches in question exceeded 10 cwt., their actual weight was not ascertained (except for the purposes of the prosecution), and payment was made on 10 cwt. only. It was not the practice at the mine to make any distinction in respect of stones and dirt in the hutches, and none was made from the hutches in question. It was also admitted that no opportunity had been given to the checkweigher appointed by the men to ascertain the true weight of the hutches.

The Sheriff-Substitute (DAVIDSON) held that overfilling was not improper filling in the sense of the provision in section 12 of the Act, and that the agreement in question being in effect an agreement for a deduction not authorised by the section, the practice founded upon it was illegal, and he accordingly found the contravention proved.

The reasons of appeal stated by the appellant were, *inter alia*—" (1) Because the com- " plaint was irrelevant. (2) Because a valid agreement was made between masters and " men in No. 2 pit, Fairhill, for deductions in respect of hutches improperly filled."

The cases of *Bourne* v. *The Netherseal Colliery Company*, 20 Q.B.D. 606, and 14 App. Cas. 228, and *Kearney* v. *The Whitehaven Colliery Company*, 1893, 1 Q.B.D. 700, were cited in the argument.

At advising—

LORD WELLWOOD.—This case also turns upon the construction of section 12, sub-section (1), of the Coal Mines Regulation Act, 1887. But the question is not the same.

Under the proviso in section 12 (1) it is competent for mine-owners and miners to agree upon deductions not merely in respect of stones and dirt, but also in respect of " hutches " being improperly filled."

There is no definition in the statute as to what is meant by " improper filling," but it is sufficient to say that the complainer himself admits—" I think a hutch is improperly " filled if it contains too little or too much, or where two different minerals are filled " together."

Now what was done at the appellant's colliery was that the owners and the men agreed that 10 cwt. of stuff thould be the standard contents of a hutch, because in their opinion it was inconvenient and dangerous to put on a greater load. Accordingly, while the contents of all hutches under 10 cwt. were accurately weighed at the pit-head, when it was ascertained that a hutch contained more than 10 cwt. the weighing was not carried further, and the miner was paid on a weight of 10 cwt. But then they were paid on the footing of the 10 cwt. being coal, and no deduction was made in respect of stones or dirt. I see nothing in the evidence or the decisions to lead me, far less to compel me, to hold that overfilling is not improper filling. If it is improper filling, the statute authorises masters and men to agree as to a deduction in respect thereof, and they are the judges of the amount of the deduction and also—what is involved—of what constitutes overfilling. Our opinion is asked whether to deduct or disallow payment for anything beyond 10 cwt. is a proper deduction or not. I doubt whether it is our province to decide that matter. But if it is, I am of opinion that the deduction is both reasonable and valid. To load even 10 cwt. the stuff must be piled up to a height of 10 or 11 inches above the lip of the hutch, and it is plain that a hutch cannot with convenience or safety hold a much greater heap.

As to whether loading beyond 10 cwt. is dangerous or not, I confess I prefer to accept the views of those most interested, viz., the owners of the pit and the miners who worked in it, and I am not disposed to attach much importance to the theoretical views of the witnesses who apparently have, rather unwillingly, supported this prosecution. As in the last case, the complaint seems to have emanated from the checkweigher, the witness Gilmour, a miners' agent whom the complainer held, I think erroneously, to represent the men. Now, I think it is sufficient in this matter to quote the following passage in the cross-examination of the complainer—"I have known the standard system since I came to Scotland. I know "about 12 collieries that use it. To my personal knowledge no individual miner has com- "plained. I had earlier complaints in this district against the standard system. I "assumed Mr. Gilmour represented the men. I have heard that the men asked for the "restoration of the system. I disapprove of fixing a standard for loading hutches in this "particular way, but not in a general way. I think the maximum amount in the hutches "at Fairhill should be about 12 cwts. There is a certain amount of danger in overloading "hutches, both to life and property. To fix 10 cwt. errs on the side of safety. It was "explained that safety was the object of the standard. The only other reason I can suggest "is that the master gets a little overweight, but I do not suggest that in this case. It is a "very good way to let the miner know that if he goes beyond a certain quantity he will lose "for it. I would disapprove of paying a man for doing a dangerous thing. If the man "knew how much over 10 cwt. he sent up he might remember and restrict the quantity in "future. To reach 10 cwt. you need to go considerably beyond the top of the hutch. At "a certain height there is danger, but that depends a great deal on the class of coal." He says further—"Over 12 inches, unless carefully filled, some coal might fall down the shaft, "not if filled square. That requires care. I would leave it to the management to decide "what is safe for a hutch to hold. When 10 cwt. is in the hutch filled square, it will be 5 "or 6 inches above the lip. The average man might fill it 6 to 12 inches high. My own "maximum would be much more than 10 cwt. (Q) Would it not be unsafe then to fill "more?—(A) I do not think so. A hutch might contain far more than 10 cwt., and "squarely filled be only 12 inches high. In fixing the standard of safety I would take the "best filled, not the average."

In the face of those admissions alone—it being admitted that it is a matter of opinion and degree what constitutes overfilling—how can it be said that it is proved that there was no overfilling, and that this deduction is so excessive as not to be a deduction authorised by the statute?

As to the owners making any profit out of the system, I can only say that if there is any truth in the evidence in the other case to the effect that the deduction of ½ cwt. for stones and dirt per hutch is a fair deduction, the miners will in the long run distinctly benefit by this agreement. They can always avoid overloading a hutch, and if they do not overload they are sure of being paid for the whole of the stuff in the hutch as if it contained pure coal without any deduction for stones and dirt.

The only difficulty in the case arises from the fact that the appellants did not weigh the contents of the hutch beyond 10 cwt. This no doubt seems at first sight a failure to carry out the provisions of the statute; the appellants neither weigh the coal separately where the contents are above 10 cwt., nor do they ascertain the gross weight in those cases. But I do not think that it is sufficient to warrant a conviction, because the result would have been precisely the same if they had weighed the full contents of every hutch. The agreement being that in fixing the amount to be paid for, nothing should be allowed for the weight over

10 cwt., there was no need to ascertain the precise weight of the surplus, which probably seldom exceeded $\frac{1}{4}$ cwt. or $\frac{1}{2}$ cwt., and, I may observe in passing, was not all coal.

In the view which I take of the case it is unnecessary to refer to the English cases mentioned by the Sheriff, as I think they have no direct application to the questions which we have now to decide. With some of the observations made by the learned judges I cannot say that I agree. But these were *obiter dicta*, and the points really decided in the cases, as to which I do agree, were entirely different from those in this and the other case before us.

I do not agree that the words "the mineral contracted to be gotten" in the first paragraph of section 12(1) mean the gross contents of the hutch. They certainly do not bear that meaning in the proviso which follows, and they cannot on any reasonable construction bear a different meaning in the first paragraph of the clause.

I do not think, however, that there should be much dispute as to the practical effect of the clause. The leading object of the enactment is that where the miners' wages depend upon the amount of the mineral contracted to be gotten, the mineral—in the present case coal—should be accurately weighed, and that in my opinion must be done if no arrangement is made as to deductions.

If there is an agreement as to deductions in respect of stones or dirt, I agree that as the purpose of the agreement is to avoid weighing the coal, the deduction must necessarily be made from the gross weight of the contents of the hutch, and for this purpose the gross contents of the hutch must be weighed.

Again, in the case of a deduction in respect of improper filling by overloading, the practical way to give effect to such deduction seems to be to disallow or deduct payment for all the stuff brought up beyond the recognised standard weight. In this view it is unnecessary (although to satisfy the precise words of the statute it might be prudent) to weigh the whole contents of the hutch even beyond the standard weight. The result would be precisely the same.

Lastly, if the owner of the colliery neither weighs the coal separately nor arranges for a deduction, he will either subject himself to a penalty for not weighing, or possibly be held confessed as liable to pay on the gross weight.

These are the views which I venture to take of the application of this clause, and I do not think that in substance they much differ from the opinions expressed by the learned Judges in the English cases.

If the deduction is legal and properly made, it is not necessary to criticise the terms of the complaint. But it is to be observed that the complainer speaks of the gross weight of stuff in the hutches as being in every case coal. Now, it is quite certain that that was not the case. If the charge had been that the appellants failed to weigh the contents of the hutch, or the amount of the coal contained in it, and failed to pay on the gross contents of the hutch or of the coal, the charge might have been relevant, although I think that on the evidence a conviction would not have been obtained on such a charge, because I think that practically there was no failure to weigh. But as the charge stands, the evidence does not square with it, or at least does not prove it, because it is not proved that the gross contents of the hutches were coal.

As to the charge under section 13 of not giving the checkweigher facilities—if the miners who appoint the checkweigher agree to certain deductions, the result of which agreement is to dispense in part with a checkweigher's duties in seeing the actual coal weighed, I cannot see what right he has to demand facilities which are inconsistent with the agreement of his constituents. The statute contemplates this alternative. The checkweigher is to "take a "correct account of the weight, or determine correctly the deductions, as the case may be," sec. 13 (1), and for these purposes he is to get facilities.

On the whole matter I think that this conviction also should be quashed.

LORD ADAM—I concur in the result of Lord Wellwood's opinion, and have little to add.

The first question is, whether overloading is improper filling in the sense of the Act. That overloading may be dangerous is not doubtful, and if a hutch is filled so as to be dangerous, from the heaping up of the mineral therein, or otherwise, I cannot see that that hutch is properly filled—or otherwise than improperly filled. I see no ground for limiting improper filling to the case where an undue proportion of dross is sent up in the hutch.

Then, if overloading be improper filling, the parties are free to contract as to deductions being made in respect thereof, and that such deductions may be determined in such special mode as may be agreed upon by the parties.

Now, it will be observed that the deductions agreed on, in the case of improper filling, may result in the miner not being paid for the actual amount of the mineral contracted to be gotten by him. That would be so, for example, in the case of a deduction made in respect

of an undue proportion of dross in a hutch—which nobody says is not improper filling—for dross is coal, the mineral contracted to be gotten.

I see nothing illegal, therefore, in the parties agreeing that 10 cwt. should be taken to be a full and proper load for a hutch, and that any mineral in the hutch above that weight should be deducted.

I further agree with Lord Wellwood that there is nothing in the evidence to show that a higher limit of weight might with safety be adopted in this pit.

I am not impressed with the Sheriff-Substitute's views on this point, founded on the absence of accidents in the pit under the operation of the agreement in question, and which he calls real evidence. I should have thought that parties in fixing the limit of safety in loading a hutch, would necessarily have in view the fact that in the ordinary working of the pit that limit would in numerous cases be exceeded, and provide accordingly. *Quomodo constat* that if the limit had been fixed higher in this case, and that limit exceeded, as it presumably would have been, numerous accidents might not have followed.

I therefore concur with Lord Wellwood that the conviction of the first charge cannot be sustained.

With reference to the second charge, I do not entirely concur in his views. It appears to me that, under section 13 (1) of the Act, when a checkweigher has been duly appointed on behalf of the men, and stationed at the place appointed for the weighing of the minerals, he is entitled to have facilities for taking a correct account of the minerals gotten by the miners. A correct account of course implies that the hutch shall be fully weighed—a course which was not followed in this case.

I do not think it is a good answer to say that the men had, in consequence of their agreement, no interest in ascertaining the weight of the minerals in a hutch beyond the 10 cwt. limit, because I think that the men had such an interest, even because of the agreement. It was of importance for them to know how it operated in practice, whether favourably or unfavourably for them, and they could only ascertain the amount of deductions which were being made from them by the hutches being fully weighed.

I think, moreover, that the directions of the statute must be in terms complied with.

But I think that the conviction cannot be sustained, because the charge as stated is altogether irrelevant. There was no statutory duty imposed, as alleged, on the appellant to weigh the actual weight of coal contained in the hutches, and there was no duty to afford facilities to Gilmour to take a correct account of the coal contained therein.

The Act takes a very sharp distinction between the minerals gotten by the miner and the minerals contracted to be gotten. The duty imposed upon the owner is to truly weigh the former—that is, the whole contents of the hutch—and not the latter, which is the coal. But it is the latter which the appellant is charged with not truly weighing—a duty which the statute does not impose on him, and which the evidence shows could not possibly be done.

I therefore think the conviction must be set aside.

Lord Justice-Clerk—I agree with Lord Wellwood and with Lord Adam in so far as he concurs with Lord Wellwood's opinion, and I only think it necessary to add a few words on the point on which there is a difference of view between your Lordships.

I cannot read the words in section 12, "mineral gotten shall be truly weighed," as referring to anything else than the "mineral contracted to be gotten." If the weight is to be ascertained by exact weighing without agreement, the thing to be weighed is the coal. That is, according to my reading, what is ordered to be weighed. But if there is cause for deduction because of improper filling, then master and man may agree what is to be deducted for improper filling. If it be held, as I think it must be, on the evidence, that overfilling may be improper filling, then I think that an agreement by the master and men that if a hutch contains more than a certain weight such hutch is overfilled, and I see no ground for holding that master and men may not agree that what is over that weight shall be disallowed in respect of the overfilling. The power to them to agree on a "special" mode of ascertaining deduction seems to me to be sufficient to make this mode legal.

It is plain, I think, that deduction for overfilling must include a deduction of coal, for it is of the character of a fine to prevent an improper proceeding, and if agreement be made on that matter, it can only be applied in the case of a working producing pure coal, as workings often do, by a deduction of coal. Further, it would not be a fine unless it applied to coal. For being a fine in kind, it can only apply to what has value. It is a part of what is contracted to be gotten for the master by the miner—that is to be deducted in computing what is due to the man for getting it. It is my opinion that the master and men may agree that such a deduction shall be the overplus over the agreed-on weight.

The Court quashed the conviction, with expenses.

Counsel for the appellant, Ure, Clyde. Agent, Alex. Morison, S.S.C.

Counsel for the respondent, Comrie Thomson, J. H. Reid. Agent, Crown Agent.

Three cases relating to the appointment of checkweighers have come before the courts, one at my instance as a criminal prosecution, No. 18 Table, and two as civil cases for the recovery of wages.

So many complaints had been made to me of managers refusing to recognise and afford facilities to checkweighers that I thought it advisable to bring a case before a sheriff, not for the purpose of punishing a manager, but in order to obtain a finding as to the real meaning of the law.

I selected a case at Haywood Colliery, where it seemed to me and to Mr. M'Laren, one of the inspectors assisting, who specially inquired into the matter, that the manager had acted arbitrarily and illegally. The facts are set forth in the following note by the Sheriff-Substitute.

NOTES OF SHERIFF-SUBSTITUTE MARK GEORGE DAVIDSON'S JUDGMENT IN PROSECUTION OF JAMES MALCOLM.

This is a complaint by the Inspector of Mines, for an alleged breach of section 13, sub-section 2 of the Coal Mines Regulation Act. The facts on which the complaint is laid are these: That David Nimmo being checkweigher at No. 14 Pit, Haywood, was interfered with at the pit-head by the respondent, and prevented from fulfilling his duties as checkweigher, on 19th March 1894.

It is denied that Nimmo was a properly appointed checkweigher, and although in the view I take it is not necessary for me to decide this point, it is worth while to review the circumstances of his election. On the 5th of February the men employed in the pit did not work. On their way to the pit-head they were summoned to a meeting held in the open air to decide on the appointment of a checkweigher, and at that meeting they appointed Nimmo. I incline to think that was a valid appointment. It is an extremely loose and unsatisfactory method of electing such a functionary, and I cannot believe that the framers of the Act contemplated such a method; but I think that under the Act it is a good appointment, although I see that there might be two or more competing checkweighers appointed at different meetings on the same principle. The Act prescribes no method whatever for the election of a checkweigher, and if there is evidence that the miners had a meeting and appointed a man, I do not see how the appointment can be held invalid, no matter what the number of miners present happened to be. But it was suggested that in order to satisfy section 14, sub-section 1 of the Act a second meeting should be held on the same day to appoint Nimmo by ballot, this being suggested by the witness Traill, who appears to have taken the lead in the matter, and who had evidently some acquaintance with the provisions of the Act. A little knowledge is a dangerous thing. The second meeting was absolutely futile. The election by wafer matches was not a ballot, and even if it were the proceedings failed to satisfy the sub-section, because a majority of the miners did not take part in them. A deputation was sent from this meeting to the respondent, and they told him that a checkweigher had been appointed; but I consider it proved that they did not tell him who he was. The respondent replied that according to a former arrangement a ballot was to be taken at which he was to be represented, prior to the appointment of a checkweigher for the pit. The deputation then left, but failed to find the meeting, which had dispersed. There is no doubt, however, that the men proceeded to act on the manager's view. They sent a deputation to the office to get the ballot papers, and the deputation was instructed to go again and again till they got them. The respondent at once ordered the papers, and they arrived on or about the 9th. The deputation did not carry out their instructions, and the manager did not think it his duty to call the miners together to take the ballot, and the papers lay in the office until the 14th of March without any further proceedings. On that date the miners had another meeting, at which they re-appointed Nimmo, and it was agreed that he should begin his duties on the 19th. No further notice was sent to the respondent. On the 19th Nimmo appeared at the pit-head, the pit-headman objected to his interference and sent for the respondent, who undoubtedly, in my view, refused Nimmo the facilities necessary for carrying out his duties as a checkweigher. As Nimmo produced no authority, and declined to name any mandatory who was a miner in the pit, the policeman was sent for, and ultimately Nimmo left the pit-head.

The respondent pleads that under an agreement come to in September 1893 a checkweigher could not be appointed for the pit unless by a ballot taken under the auspices, or at least with the knowledge, of the management. I think that such an agreement, if proved, would be a good agreement, on the authority of the Merryton case, but I do not think it proved in this case. On the other hand, I have no doubt that there was a distinct understanding that

a ballot was to be taken before a checkweigher was appointed, and I think the respondent had sufficient cause to expect this. It is no doubt unnecessary, under the statute, that notice should be given to anyone of a checkweigher's appointment, and his name and the date at which he is to begin to act; but it is eminently reasonable that such notice should be given, and from the evidence I gather that to give such notice is usual, if not invariable. It may be that a manager could be convicted under the section libelled, although he was unaware that the person interfered with was checkweigher, because it might be owing to his fault or that of those responsible to him that he was in ignorance of the fact. In this case it was not the respondent's fault that he did not know Nimmo was checkweigher. It was owing to the omission of reasonable notice on the part of the workmen. That being so, I think the respondent is entitled to be assoilzied, although I think he was ill-advised to act as he did. From the evidence it appears that on the day after the events which have led to the prosecution, Nimmo was appointed by ballot, and has been acting as checkweigher ever since, without friction, and it does not appear in the proof that any of the men lodged a complaint. In these circumstances it is a matter of some surprise that a prosecution was undertaken.

It will be observed that the Sheriff-Substitute, while saying, "It is no doubt unnecessary " under the statute that notice should be given to anyone of a checkweigher's appointment," yet assoilzed respondent "owing to the omission of reasonable notice on the part of the workmen," but as the miners had already twice appointed the checkweigher (for the second election, though futile as a ballot, seems to have been an appointment), and had intimated the appointment to the manager, and as this notice was not accepted but novel claims set up by the manager as to the mode of election, I think he was to blame for any future difficulties that arose in the case. The papers were submitted to Crown Counsel after the trial, and they advise that in these appointments—

(1.) There should be some previous short notice given to the men of the pit, by poster stuck up, that a meeting for appointing a checkweigher is to be held, and specifying place, day, and hour.

(2.) That men of other pits, or otherwise not qualified, and boys, should not take part.

(3.) That a deputation of two or three miners should intimate the appointment to the manager, giving the name of the checkweigher, and specifying the date when he will enter on his duties.

(4.) That if a ballot be resorted to it should be carefully and efficiently carried out. Ballot papers are not necessary.

In other two cases to which my attention had been called, but in which I declined to interfere, the checkweighers, who had been prevented by the managers from acting, sued the managers in the small debt court for the amount of wages they had been prevented earning. The question in both cases depended on the mode of appointment, and had some points of resemblance to the Haywood case. I cannot give the details; in one case the wages were awarded, but not in the other.

Part VIII.

Complaints from Mines under the Coal Mines Regulation Act.

I have received between 60 and 70 letters of complaint during the year from miners or their agents; 10 of these were anonymous. In addition some verbal complaints were made. Thirty-three of these complaints were with reference to questions arising under the weighing clauses of the Act, such as facilities to be afforded to checkweighers, scales of deductions, tareing of hutches, &c.

The remaining subjects of complaint were: bad ventilation and presence of gas; insufficient inspection by officials; want of timber; danger in shafts or roads; employment of boys or women over hours; danger from underground water; miners descending to their work by stair pits at improper times, &c.

All these complaints were attended to, and absorbed a considerable proportion of time.

Some were without much foundation, but in the majority of cases there were good reasons for calling attention to the matters complained of.

PART IX.

BOARD FOR EXAMINATIONS FOR MANAGERS' CERTIFICATES.

The Board for Examinations for Granting Certificates of Competency to Managers and Undermanagers of Mines is constituted as follows :—

William Laird, Esq.,
Jas. S. Dixon, Esq.,
James Mungall, Esq., } Owners' Representatives.
Alex. Simpson, Esq.,
J. W. Ormiston, Esq.,
Henry Telfer, Esq., } Mining Engineers.
Mr. John Simpson,
Mr. Thos. Sandridge,
Mr. Hector McNeil, } Workmen's Representatives.

J. B. Atkinson, H.M. Inspector of Mines (Chairman).
R. Calder, B.Sc., M.A., Broughty Ferry (Secretary).

The Examiners are : Jonathan Hyslop, M.E., the Secretary, and James Ormiston, M.E.

At the annual examination held in Edinburgh, on the 24th and 25th May last, 84 candidates were examined for managers' certificates and 17 passed; for undermanagers' certificates, there were 59 candidates examined, and 54 passed.

In October last the Board lost by death Mr. John Austine, one of the owners' representatives. Mr. Austine was a gentleman universally esteemed. He had sat on the Board since 1884, and was one of its most useful members. You were pleased to appoint Mr. Jas. S. Dixon, of the Bent Colliery Co., as his successor.

PART X.

MINES UNDER THE METALLIFEROUS MINES ACT.

Table XI. gives a summary of the information contained in the annual returns for the past year as to persons employed and mineral raised at mines in the district under the Metalliferous Mines Regulation Act, 1872. The table is arranged in the same order as that for the mines under the Coal Mines Act.

TABLE XI.

Counties.	Underground.			Aboveground.							Total Underground and Aboveground.	Tons of Mineral raised.		
	Male Persons.			10 to 13.		13 to 18.		Above 18.						
	12 to 16.	Above 16.	Total.	Males.	Females.	Males.	Females.	Females.	Males.	Total.		Limestone.	Lead Ore.	Total.
Clackmannan	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Edinburgh	7	169	176	—	—	7	—	—	59	66	242	146,980	—	146,980
Fife	3	90	93	—	—	6	—	—	31	37	130	56,112	—	56,112
Haddington	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lanark, Eastern portion	—	150	150	2	—	27	—	1	83	113	263	15,716	1,876	17,592
Linlithgow	—	4	4	—	—	—	—	—	5	5	9	2,994	—	2,994
Peebles, and Sutherland	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stirling, Eastern portion	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals 1894	10	413	423	2	—	40	—	1	178	221	644	221,802	1,876	223,678
„ 1893	8	417	425	3	—	39	—	1	188	231	656	229,072	1,642	230,714
„ 1892	15	485	500	11	—	46	—	1	209	267	767	277,598	2,022	279,620

Mining under the Metalliferous Mines Act is not an important factor in the district, and the tendency during the last few years is to make it still less so.

There were two fatal accidents and one non-fatal accident reported during the year. They are tabulated in Appendices D. and E.

No. 1, Appendix D.—Deceased met his death in a very simple manner. Feeling unwell he did not visit the mine until after breakfast. He entered the mine by a short incline extending from the surface and dipping 1 in 1. On arriving at No. 1 level he walked along it to visit two miners who were putting up an upset from the level below, but bearing too much to the right he fell over the bench to the lower level, a distance of 44 feet, and fractured his skull, death being instantaneous. After descending the mine, deceased had probably gone forward before his eyes had become accustomed to the light of his lamp and so had missed his way. Had there been a fence across the opening it would have prevented the accident. The openings in the mine have since been fenced across.

No. 2, Appendix D.—Deceased and another miner were engaged holing at the face of a room in a limestone seam, when a block of limestone weighing about two tons fell from the face and crushed deceased, killing him instantly; from my inspection of the place I formed the opinion that deceased, who was the leading man, had acted somewhat incautiously in venturing below the stone without first supporting it by a rance.

Part XI.

General Remarks.

The past year has seen the most prolonged and general strike ever known in the Scottish coal trade. It commenced on June 25th, and lasted 15 weeks in Lanarkshire and the western part of the district, and 17 weeks in Fife and the eastern part of the district.

The desire of the miners was to obtain an advance of wages, or as it was stated, to recover the amount of a reduction which had been imposed some months before. The strike was not successful, work being resumed on the old terms.

I estimate the loss of output of coal caused by the strike to be from 2½ to 3 millions of tons.

The strike did not extend to the oil shale mines, but the scarcity of coal slightly crippled operations there.

During the strike the miners opened up small mines on the outcrop of coal seams in different parts of the district. No notice was given to me of these openings, which were all of an illegal nature, and in some cases proceedings at law were taken against the offending parties, in others the coalmaster or mineral owner winked at the matter. A fatal accident already referred to occurred in one of these mines.

It is unnecessary to say that the profits attending the mining industry cannot with a strike lasting from 15 to 17 weeks have been satisfactory, while the miners lost their wages entirely during the time of the stoppage and secured no rise when work was resumed. It is true that some owners were partially compensated by getting rid of large stocks, this was particularly the case in Fife, and a few collieries that continued working during the strike secured some advantage, while the miners had some assistance from their brethren in England.

The work of the district has been attended to in the usual manner by myself and Mr. R. McLaren and Mr. H. Johnstone, the inspectors assisting. Every accident and complaint received has been investigated. Papers referred to me from the Home Office, such as applications for exemptions from two shafts and from the use of gunpowder in cartridges, plans of abandoned mines, and other matters have been promptly attended to.

In addition to the routine work, many inspections of mines of a general nature have been made to ascertain how far the Mines Acts are being attended to.

I append the lists of accidents and list of mines in the district.

I have, &c.,

J. B. ATKINSON.

The Right Honourable H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall, London.

APPENDIX A.

COAL MINES REGULATION ACT.

LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom within one Year and a Day from the Date of the Accident, in and about the Mines in the District, including those on Private Branch Railways and Tramways, and in Washing and Coking Coal, during the Year 1894.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate. (County.)	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous Underground.	Lives lost. Above Ground.	Lives lost. Total.
	1893.														
1	May 16 6.30 a.m.	1st	Home Farm -	Lanark - -	Hamilton, McCulloch & Co.	John Robertson -	18	Coal picker	Fell from waggon; back injured.	–	–	–	–	1	1
2	Aug. 15 1 p.m.	8th	Denend -	Fife - -	Denend Coal Co. - -	James Shedden -	29	Miner -	Fall of stone; back injured	–	1	–	–	–	1
	1894.														
3	Jan. 20 11.30 a.m.	7th	Dykehead -	Lanark - -	Summerlee and Mossend Iron and Steel Co.	John Barns -	59	Miner -	Fall of stone - -	–	1	–	–	–	1
4	Feb. 14 8.30 a.m.	2nd	Westrigg -	,, - -	James Wood (Lim.) -	Robert Watson -	47	Machine-man.	Fall of roof - - -	–	2	–	–	–	2
						Peter Saddler -	34	,, -							
5	Feb. 14 3.30 p.m.	9th	Benhar -	,, -	Robert Addie and Sons (Lim.)	James Doran -	34	Miner -	Fall of coal and stone -	–	1	–	–	–	1
6	Feb. 16 8.20 a.m.	3rd	Bog - -	,, - -	Hamilton, McCulloch, and Co.	Andrew Frame -	17	Pony driver	Crushed by tubs - -	–	–	–	1	–	1
7	Feb. 17 10.30 a.m.	5th	Clydesdale -	,, -	Gavin Whitelaw - -	Walter McDonald -	56	Miner -	Fall of coal - -	–	1	–	–	–	1
8	Feb. 24 8.30 a.m.	4th	Coltness -	,, - -	Coltness Iron Co. (Lim.) -	William Hamilton -	49	Pitheadman	Caught by pump rod -	–	–	–	–	1	1
9	Mar. 6 3.30 p.m.	9th	Greystonelea -	,, -	Hillhouserigg Coal Co. (Lim.).	Harry Kane -	13	Drawer -	Crushed by tub - -	–	–	–	1	–	1
10	Mar. 9 10 p.m.	1st	Denend -	Fife - -	Denend Coal Co. - -	James Bissett -	68	Engineman	Overcome by steam -	–	–	–	1	–	1
11	Mar. 19 9.45 a.m.	4th	Oakbank -	Edinburgh -	Oakbank Oil Co. (Lim.).	Alexander Young -	39	Miner -	Fall of midstone - -	–	1	–	–	–	1

List of the Fatal Accidents—*continued*.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate. (County.)	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
12	Mar. 21 10.30a.m.	4th	Hassockrigg	Lanark	Coltness Iron Co. (Lim.)	Thomas Edwards	39	Miner	Fall of roof	–	1	–	–	–	1
13	Mar. 28 12.15p.m.	6th	Mauricewood	Edinburgh	Shotts Iron Co.	John Bell	32	"	"	–	1	–	–	–	1
14	Mar. 29 12 noon	6th	Cameron	Fife	Bowman & Co.	Andrew Nicholson	14	Hanger-on	Crushed by tub	–	–	–	1	–	1
15	Mar. 30 9.30 p.m.	5th	Coltness	Lanark	Coltness Iron Co. (Lim.)	Andrew Doolan	21	Brusher	Fall of stone	–	1	–	–	–	1
16	Apr. 3 11.50a.m.	6th	Wishaw	"	Glasgow Iron and Steel Co. (Lim.).	Jacob Bell Robert Bell	55 50	Brushers	"	–	2	–	–	–	2
17	Apr. 7 9.0 a.m.	3rd	Blairhall	Fife	Coltness Iron Co. (Lim.)	William Harrower	48	Miner	"	–	1	–	–	–	1
18	Apr. 16 12.30a.m.	3rd	Newbattle	Edinburgh	Lothian Coal Co. (Lim.)	Gordon Kerr	43	Stone miner	Explosion of shot	–	–	–	1	–	1
19	Apr. 19 1.30 p.m.	8th	Polton	"	"	Martin Rorke	28	Brusher	Fall of roof	–	1	–	–	–	1
20	Apr. 25 3.45 p.m.	9th	Brownlee	Lanark	Archibald Russell	Robert Ruthven	19	Bottomer	Fell from mid-working	–	–	1	–	–	1
21	Apr. 27 11.0 a.m.	5th	Earnock	"	John Watson (Lim.)	Peter Divers	23	Chainer	Fell before rake	–	–	–	1	–	1
22	May 2 7.20 p.m.	4th	Binniehill	Stirling	"	Robert Burt	33	Brusher	Explosion of gunpowder	–	–	–	1	–	1
23	May 7 9.30 a.m.	3rd	Barnsmuir	"	Barnsmuir Coal Co. (Lim.)	Thomas Moore	56	Miner	Fall of stone	–	1	–	–	–	1
24	May 8 8.30 a.m.	3rd	Darngavil	Lanark	Darngavil Coal Co. (Lim.)	William White	25	Repairer	"	–	1	–	–	–	1
25	May 8 10.30a.m.	5th	Kelty	Fife	Fife Coal Co. (Lim.)	Charles Clark Thomas Wood David Graham	38 25 38	Sinkers	Knocked off kettle while ascending shaft.	–	–	3	–	–	3

List of the Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate. (County.)	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
26	May 9 5.25 a.m.	8th	Leven	Fife	Fife Coal Co. (Lim.)	Robert Hair	25	Brusher	Fall of roof	–	1	–	–	–	1
27	May 19 10.20a.m.	4th	Riddochhill	Linlithgow	Gavin Paul and Sons	Alex. Thomson	53	Miner	Fall of coal	–	1	–	–	–	1
28	May 29 8.30 a.m.	2nd	Balquhatstone	Stirling	John Nimmo and Son	Alex. McPherson	29	"	Fall of stone	–	1	–	–	–	1
29	June 13 2.0 p.m.	7th	Mossband	Lanark	Linridge Coal Co.	Wm. Y. Kirkwood	48	Blacksmith	Overwound	–	–	–	–	1	1
30	June 13 4.0 p.m.	3rd	Lochgelly	Fife	Lochgelly Iron and Coal Co. (Lim.)	William Beveridge John Thomson	48 26	Repairers	Fall of roof	–	2	–	–	–	2
31	June 16 12 noon	6th	Clackmannan	Clackmannan	Clackmannan Coal Co.	James Ferguson	45	Miner	"	–	1	–	–	–	1
32	June 18 7.40 a.m.	1st	Auchlochan	Lanark	W. C. S. Cuninghame	Alexander Graham	46	"	Fall of coal	–	1	–	–	–	1
33	June 19 2.30 p.m.	8th	Longriggend	"	James Nimmo & Co. (Lim.)	James Milligan	53	"	Fall of stone	–	1	–	–	–	1
34	June 20 10.45 a.m.	5th	Wellsgreen	Fife	Fife Coal Co. (Lim.)	David Kay	26	Loco-guard	Run over by waggons	–	–	–	–	1	1
35	June 20 11.15 a.m.	5th	Bellsdyke	Lanark	Bellsdyke Coal Co.	John McAlpine	48	Miner	Fall of stone	–	1	–	–	–	1
36	June 25 9.30 a.m.	3rd	Bog	"	Hamilton McCulloch & Co.	Charles Laird	27	"	"	–	1	–	–	–	1
37	June 27 9.20 p.m.	3rd	Home Farm	"	"	Edward Brannan Matthew Corbett William Stevenson	36 40 22	Shaftmen	Scaffold fell in shaft owing to crane running amain.	–	–	3	–	–	3
38	July 10 8.0 a.m.	2nd	Newbattle	Edinburgh	Lothian Coal Co. (Lim.)	Mungo Pryde	23	Dookhead-man.	Crushed by tub	–	–	–	1	–	1
39	Aug. 21 8.30 p.m.	1st	Champfleurie	Linlithgow	Linlithgow Oil Co. (Lim.)	Thomas McGown	32	Miner	Fall of shale	–	1	–	–	–	1
40	Sept. 3 11.30a.m.	5th	Hill	Lanark	A. and F. Danks	James Sommerville	27	Oversman	Fall of roof	–	1	–	–	–	1

List of the Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate. (County.)	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
41	Sept. 5 4.40 a.m.	7th	Dalbeath	Fife	Fife Coal Co. (Lim.)	Andrew Greig	66	Reddsman	Fall of roof and side	–	1	–	–	–	1
42	Sept. 6 7.30 a.m.	2nd	Sheardale	Clackmannan	Robert McAllister and Sons	William Shepherd	32	Miner	Fall of roof	–	1	–	–	–	1
43	Sept. 8 7.30 a.m.	2nd	Saline	Fife	Saline Valley Coal Co.	James Thomson	28	,,	Fall of coal	–	1	–	–	–	1
44	Sept. 13 8.0 p.m.	1st	Linlithgow	Linlithgow	Linlithgow Oil Co. (Lim.)	John McLaren	39	Drawer	Crushed by carriage	–	–	–	1	–	1
45	Sept. 24 9.45 a.m.	4th	Shawfield	Lanark	Wilson's and Clyde Coal Co. (Lim.).	James Littlejohn	30	Miner	Fall of coal	–	1	–	–	–	1
46	Oct. 10 12.10p.m.	6th	Westrigg	,,	James Wood (Lim.)	Edward Kyles	59	Bottomer	Fell from mid-working	–	–	1	–	–	1
47	Oct. 15 3.30 a.m.	6th	Sheardale	Clackmannan	Robert McAlister and Sons	Thomas Cowan	32	Brusher	Fall of stone	–	1	–	–	–	1
48	Oct. 18 1.0 p.m.	6th	Haywood	Lanark	Haywood Gas Coal Co.	David McCombie	55	Labourer	Caught by pulley	–	–	–	–	1	1
49	Oct. 23 11.0 a.m.	5th	Law	,,	Wilson's and Clyde Coal Co. (Lim.).	William Hamilton	34	Miner	Fall of roof	–	1	–	–	–	1
50	Oct. 25 11.0 p.m.	8th	Blairhall	Fife	Coltness Iron Co. (Lim.)	James Haddow	37	Contractor-brusher.	Explosion of fire-damp	1	–	–	–	–	1
51	Oct. 26 1.30 p.m.	7th	Donibristle	,,	Donibristle Colliery Co.	David Paterson	23	Drawer	Crushed by tub	–	–	–	1	–	1
52	Oct. 26 9.0 p.m.	14th	Fairhill	Lanark	Archibald Russell	William Jack	44	Miner	Fall of stone while drawing wood.	–	1	–	–	–	1
53	Nov. 1 5.0 p.m.	3rd	Newbattle	Edinburgh	Lothian Coal Co. (Lim.)	William Borthwick	55	,,	Fall of coal	–	1	–	–	–	1
54	Nov. 5 6.30 p.m.	5th	Lassodie	Fife	Thomas Spowart & Co. (Lim.).	Peter Forbes	34	Oncostman	Fell down shaft; rope broke	–	–	1	–	–	1
55	Nov. 15 8.30 a.m.	3rd	Newbattle	Edinburgh	Lothian Coal Co. (Lim.)	James Quinn	27	Labourer	Crushed by bogie	–	–	–	–	1	1
56	Nov. 17 8.30 a.m.	3rd	Wilsontown	Lanark	William Dixon (Lim.)	John Baird	22	Miner	Fall of stone	–	1	–	–	–	1

List of the Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate. (County).	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
57	Nov. 28 8.45 a.m.	3rd	Cameron	Fife	Bowman & Co.	Andrew Moyes	52	Miner	Fall of coal	–	1	–	–	–	1
58	Dec. 3 11.45a.m.	6th	Merryton	Lanark	Merryton Coal Co.	Robert Davidson	26	Engineman	Crushed by waggons	–	–	–	–	1	1
59	Dec. 10 12 noon	6th	Kinneil	Linlithgow	Kinneil Cannel and Coking Coal Co. (Lim.).	George Hamilton	61	Miner	Fall of roof	–	1	–	–	–	1
60	Dec. 13 11 a.m.	4th	Bent	Lanark	Bent Colliery Co. (Lim.)	Edward Taylor	25	Runner	Crushed by tub	–	–	–	–	1	1
61	Dec. 20 7.45 a.m.	2nd	Mauricewood	Edinburgh	Shotts Iron Co.	Hutchison Burt	17	Pony driver	Crushed by tubs	–	–	–	1	–	1
62	Dec. 26 10.45a.m.	5th	Cowdenbeath	Fife	Cowdenbeath Coal Co. (Lim.).	Mary Murray	15	Pithead worker.	Knocked down by waggons	–	–	–	–	1	1
63	Dec. 29 8.50 p.m.	5th	Haywood	Lanark	Haywood Gas Coal Co.	James Campbell	23	Assistant pit-headman.	Fell down shaft	–	–	1	–	–	1
										1	39	10	11	9	70

APPENDIX B.

List of Deaths reported from Mines in the District during the Year 1894, but not classed as accidents under the Coal Mines Regulation Act.

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.
1	Jan. 12	Whitehill (Greenfield).	Lanark	Archibald Russell	John Gray	55	Miner	Sudden death.
2	Jan. 25	Longriggend	„	James Nimmo & Co. (Lim.)	Margaret Robertson	9	Not employed	Hand crushed by waggons.
3	March 1	Westrigg	„	James Wood (Lim.)	Robert Sewell	17	Drawer	Finger injured by fall of stone. Died from inflamation of kidneys.
4	April 7.	Bathville	Linlithgow	„	James Duff	32	Miner	Crushed by waggons on colliery sidings. Deceased was employed in the pit, but was not at work on day of accident. He had gone to the colliery for his pay.
5	Aug. 1	Gilmerton	Edinburgh	Gilmerton Gas Coal Co. (Lim.)	Peter French	11	Not employed	Overcome by choke damp and fell down incline.
6	Aug. 23	Cleland (near)	Lanark	—	Robt. Andw. McKinney	12	Schoolboy	Fall of roof.
7	Nov. 29	Lumphinnans	Fife	Cowdenbeath Coal Co. (Lim.)	James Pow	14	Trapper	Fell on spur wheels. Not employed at the time.

APPENDIX C.

LIST of the NON-FATAL ACCIDENTS causing serious personal injury or arising from explosions of gas, or of any explosive, or of any Steam Boiler in the District, during the Year 1894.

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured.					
										Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1	Oct. 24	Addiewell -	Edinburgh -	Young's Paraffin Light and Mineral Oil Co. (Lim.).	James Irvine - George Duncan	32 25	Miner Drawer	Explosion of fire-damp - -	15 32	2	–	–	–	–	2
2	Feb. 10	Allanshaw -	Lanark -	Allanshaw Coal Co. -	Wm. Gilmour -	18	Miner -	Fall of coal and stone - - - -	232	–	1	–	–	–	1
3	May 5	,, -	,, -	,, -	John McKegg -	21	,, -	,, ,, - -	148	–	1	–	–	–	1
4	Apr. 23	Allanton -	,, -	Wm. Barr and Sons -	George Pettigrew	20	,, -	Fall of roof - - - -	161	–	1	–	–	–	1
5	Dec. 28	Appin -	Fife -	Street Brothers -	Wm. Campbell -	30	,, -	Explosion of shot - - -	11	–	–	–	1	–	1
6	Dec. 17	Arden -	Lanark -	Wm. Black and Sons	Archibald Miller Wm. Miller - Archd Simpson -	45 42 30	Joiner - ,, - Roadsman	Breakage of rope - - -	* * *	–	–	3	–	–	3
7	Feb. 7	Arniston -	Edinburgh -	Arniston Coal Co. (Lim.).	John Sneddon -	25	Bencher -	Caught by safety gate - -	137	–	–	–	–	1	1
8	Dec. 3	,, -	,, -	,, -	Robt Carmichael	46	Manager	Hands crushed in haulage pulley -	*	–	–	–	1	–	1
9	Mar. 9	Auchlochan -	Lanark -	W. C. S. Cuninghame	Samuel Capie -	47	Miner -	Fall of clay - - - -	83	–	1	–	–	–	1
10	May 27	,, -	,, -	,, -	Alex. Ritchie -	19	Brusher -	Caught by safety gate - -	136	–	–	1	–	–	1
11	Dec. 8	,, -	,, -	,, -	John Murphy -	37	Miner -	Struck by tub - - - -	*	–	–	–	1	–	1
12	Jan. 30	Auldton and Ashgill.	,, -	Brand & Co. -	John L. Dick -	16	,, -	Fall of coal at face - - -	13	–	1	–	–	–	1
13	Feb. 8	,, -	,, -	,, -	James Dalziel -	28	,, -	Crushed by tub - -	20	–	–	–	1	–	1
14	Dec. 22	Avonhead -	,, -	Avonhead Coal Co. -	Wm. Hunter -	36	,, -	Explosion of firedamp - -	28	1	–	–	–	–	1
15	Jan. 27	Balbardie -	Linlithgow	H. Walker and Cameron	Thomas Wishart	22	,, -	Fall of coal at face - -	90	–	1	–	–	–	1

* Still off wor k.

List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
16	Jan. 23	Balgonie	Fife	C. B. Balfour	James Rougvie	36	Miner	Fall of stone at face	10	–	1	–	–	–	1
17	Feb. 16	"	"	"	Alex. Mitchell	55	Pithead Assistant	Struck by safety gate	72	–	–	1	–	–	1
18	" 23	"	"	"	Francis Kane	47	Miner	Fall of coal at face	69	–	1	–	–	–	1
19	Oct. 30	"	"	"	Wm. Welsh	19	Wheeler	Struck by tub	*	–	–	–	1	–	1
20	Dec. 4	Balquhatstone	Stirling	John Nimmo and Son	Adam McLuckie	33	Brusher	"	34	–	–	–	1	–	1
21	Jan. 23	Bankend and Westown.	Lanark	Lesmahagow Coal Co. (Lim.).	James Donelly	55	Labourer	Crushed by waggon	70	–	–	–	–	1	1
22	" 24	" "	"	"	James Russell	20	Miner	Going back on a shot	35	–	–	–	1	–	1
23	Mar. 6	" "	"	"	Andrew Brown	40	"	" "	3	–	–	–	1	–	1
24	Jan. 5	Bathville	Linlithgow	James Wood (Lim.)	George Neilly	42	"	Fall of coal	*	–	1	–	–	–	1
25	June 2	"	"	"	Alex. Thomson Jas. Henderson	54 39	Sinker Roadsman	Fell down shaft	‡ 7	–	–	2	–	–	2
26	Apr. 9	Baton and Batonrigg.	Lanark	Morningside Coal Co.	John Morris	45	Miner	Fall of coal	84	–	1	–	–	–	1
27	June 23	" "	"	"	Michael McPake	14	Pony-driver.	Fall in front of tubs	91	–	–	–	1	–	1
28	Apr. 30	Bellfield	"	Wm. Barr and Sons	James McIntosh	60	Miner	Fall of clay at face	240	–	1	–	–	–	1
29	Oct. 29	"	"	"	Thomas Speedie	41	"	Fall of coal at face	*	–	1	–	–	–	1
30	May 16	Bellsdyke	"	Bellsdyke Coal Co.	James Tague	24	"	Fall of roof	42	–	1	–	–	–	1
31	Nov. 12	Benarty	Fife	Lochore and Capeldrae Cannel Coal Co. (Lim.).	Robert Webster	35	Labourer	Foot burnt by flue dust	*	–	–	–	–	1	1

* Still off work.
‡ Did not resume work at colliery.

List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured: Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
32	Feb. 14	Benhar	Lanark	Robert Addie and Sons (Lim.).	George Mack	13	Drawer	Fall of coal and stone at face	77	–	1	–	–	–	1
33	„ 21	„	„	Niddrie and Benhar Coal Co. (Lim.).	Alexander Reid	12	Picker	Fell off plank	7	–	–	–	–	1	1
34	Apr. 13	„	„	„	Joseph Hunter	50	Screenman	Feet crushed by waggon sprag	*	–	–	–	–	1	1
35	June 4	„	„	„	Saml Ashinhurst	14	Clerk	Arm run over by waggon	90	–	–	–	–	1	1
36	Dec. 11	„	„	„	James Gilbert	23	Brusher	Fall of roof	*	–	1	–	–	–	1
37	„ 11	„	„	„	Hugh Skelton	30	„	„	7	–	1	–	–	–	1
38	„ 13	„	„	„	Peter Williamson	30	„	Explosion of a shot	*	–	–	–	1	–	1
39	Jan. 11	Bent	„	Bent Colliery Co. (Lim.)	Hugh O'Hare	50	„	Fall of brushing	166	–	1	–	–	–	1
40	Feb. 20	„	„	„	Hugh McConnell	17	Miner	Fall of stone from roof	84	–	3	–	–	–	3
					John Furlow	16	„		3						
					Hugh Ryce	15	„		3						
41	May 19	„	„	„	Alex. Ireland	29	„	Hand caught between back-balance wheel and rope.	84	–	–	–	1	–	1
42	Apr. 16	Binniehill and Lodge.	Stirling	John Watson (Lim.)	James Thomson	28	„	Fall of stone at face	30	–	1	–	–	–	1
43	May 2	„	„	„	Henry Edwards	23	Brusher	Explosion of gunpowder	14	–	–	–	1	–	1
44	„ 10	Birkrigg	Lanark	Darngavil Coal Co. (Lim.).	James Barr	38	Fireman	Explosion of gas	14	1	–	–	–	–	1
45	Oct. 16	Blackston	Stirling	James Nimmo and Co. (Lim.).	Alex. Ure	15	Drawer	Fall of coal	50	–	1	–	–	–	1
46	Aug. 29	Blai	Lanark	Frame and Co.	Thomas Brunton	24	Runner	Struck by tub	6	–	–	–	–	1	1

* Still off work.

List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured.					
										Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
47	Jan. 5	Blairhall	Fife	Coltness Iron Co. (Lim.).	William Walker Claud Thomson	44 50	Mineral Borers.	Explosion of fire-damp	20 1	2	–	–	–	–	2
48	July 10	„	„	„	George Wilson	30	Oversman	„	56	1	–	–	–	–	1
49	Nov. 12	„	„	„	Robert Ritchie	38	Roadsman	Fall of stone	5	–	1	–	–	–	1
50	Jan. 8	Bog and Home Farm.	Lanark	Hamilton McCulloch and Co.	John Cook	14	Pony-driver.	Leg crushed by tub	60	–	–	–	1	–	1
51	„ 16	„	„	„	James Thomson	25	Loco-brakesman	Run over by waggon	150	–	–	–	–	1	1
52	„ 22	„	„	„	Daniel McGinnes Matthew Mason	40 24	Fireman Pony-driver.	Explosion of fire-damp	20 22	2	–	–	–	–	2
53	Feb. 20	„	„	„	Abraham Torrance	22	Miner	Fall of stone	42	–	1	–	–	–	1
54	Oct. 10	„	„	„	Robert Muir	30	Oversman	Explosion of fire-damp	34	1	–	–	–	–	1
55	Jan. 26	Broadrigg	Stirling	John Nimmo and Son	Archibald Gray	21	Miner	Fell from mid-working	45	–	–	1	–	–	1
56	Feb. 12	„	„	„	Alex. Conway	25	Trimmer	Crushed by waggon	21	–	–	–	–	1	1
57	May 2	„	„	„	Samuel Skelton	59	Miner	Fall of stone at face	77	–	1	–	–	–	1
58	Nov. 5	Brownlee	Lanark	Archd. Russell	Charles Graham	26	Brusher	Arm crushed by stone against prop	*	–	–	–	1	–	1
59	Jan. 30	Broxburn and Roman Camp.	Linlithgow	Broxburn Oil Co. (Lim.).	Samuel McRae	32	Roadsman	Fall of stone	80	–	1	–	–	–	1
60	„ 31	„	„	„	William Wood	19	Miner	Explosion of a shot	112	–	–	–	1	–	1
61	Feb. 3	„	„	„	Henry Daly John McCabe	19 28	„ „	„	21 56	–	–	–	2	–	2

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List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
62	Apr. 7	Broxburn and Roman Camp	Linlithgow	Broxburn Oil Co. (Lim.).	Robt. Hutchison	59	Miner	Crushed by tub	‡	–	–	–	1	–	1
63	May 18	„	„	„	James Prior	23	„	Explosion of a shot	21	–	–	–	1	–	1
64	Nov. 15	„	„	„	John Cannon	31	„	„ „	*	–	–	–	1	–	1
65	Dec. 28	„	„	„	James Gallacher	26	Drawer	Fell down incline	*	–	–	–	1	–	1
66	Jan. 19	Cadzow	Lanark	Cadzow Coal Co. (Lim.)	James Kearney	14	Lamp-trimmer.	Jammed between haulage rope and pulley.	‡	–	–	–	1	–	1
67	„ 19	„	„	„	William Brown	16	Miner	Fall of head coal and stone at face	8	–	1	–	–	–	1
68	Mar. 29	„	„	„	William Burns	17	Pony-driver.	Head jammed between tub and road-side prop.	47	–	–	–	1	–	1
69	June 1	Callendar	Stirling	Callendar Coal Co.	Peter Erskine	21	Miner	Fall of stone	†	–	1	–	–	–	1
70	„ 15	„	„	„	Robert Walker	40	„	Fall of coal	14	–	1	–	–	–	1
71	„ 25	„	„	„	David Laird	30	„	„ stone at face	32	–	1	–	–	–	1
72	Jan. 18	Camelon	„	John Dunn	Barney Solan	26	„	„ head coal	90	–	1	–	–	–	1
73	Mar. 15	„	„	„	Wm. Docherty	43	„	„ coal	95	–	1	–	–	–	1
74	„ 19	„	„	„	William Howe	28	„	„ „	‡	–	1	–	–	–	1
75	Jan. 15	Castlehill	Lanark	Shotts Iron Co.	David Dick	58	„	Crushed by tub	†	–	–	–	1	–	1
76	Apr. 14	„	„	„	James Colvin	60	„	Fall of coal and stone	†	–	1	–	–	–	1
77	Mar. 19	Clackmannan	Clackmannan	Clackmannan Coal Co.	Alexander Cook	36	„	„ coal	†	–	1	–	–	–	1
78	May 15	„	„	„	James Forsyth	26	„	„ roof	†	–	1	–	–	–	1

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List of the Non-Fatal Accidents—*continued.*

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79	May 31	Clackmannan	Clackmannan	Clackmannan Coal Co.	George Ferguson	32	Miner	Fall of coal	†	–	1	–	–	–	1
80	Feb. 16	Climpy	Lanark	Climpy Coal Co.	Thomas Gordon	20	"	" " at face	90	–	1	–	–	–	1
81	Mar. 6	"	"	"	Donald McGilvary	45	"	Fall of roof	21	–	2	–	–	–	2
					James Crookston	33	"		14						
82	Jan. 15	Clyde	"	Wilson's and Clyde Coal Co. (Lim.).	John Greenan	52	"	Fall of coal	50	–	1	–	–	–	1
83	Apr. 24	"	"	"	Thos. Madden	25	"	"	63	–	1	–	–	–	1
84	Dec. 11	"	"	"	Frank Beattie	25	"	Fall of stone	46	–	1	–	–	–	1
85	Oct. 25	Clydesdale	"	Gavin Whitelaw	John F. Hughes	38	"	Slipping of haulage rope	*	–	–	–	–	1	1
86	Apr. 3	Cobbinshaw	Edinburgh	Caledonian Oil Co. (Lim.)	Jas. Begbie	62	"	Fall of shale at face	217	–	1	–	–	–	1
87	July 16	"	"	"	Jas. Barrie	22	"	Explosion of gunpowder	59	–	–	–	1	–	1
88	Jan. 15	Coltness	Lanark	Coltness Iron Co. (Lim.)	David Hunter	23	Drawer	Fell in front of tub	‡	–	–	–	1	–	1
89	Feb. 20	"	"	"	Thos. Baxter	28	"	" "	99	–	–	–	1	–	1
90	Feb. 27	"	"	"	John Bell	45	Miner	Fall of coal	28	–	1	–	–	–	1
91	Oct. 26	"	"	"	John Brogan	21	Pony-driver.	Fell in front of set	22	–	–	–	1	–	1
92	Mar. 29	Cornsilloch	"	Arch. Russell	Walter Neilson	42	Drawer	Crushed by tub	29	–	–	–	1	–	1
93	Nov. 21	"	"	"	James Colvin	23	Roadsman	Fall of stone	*	–	1	–	–	–	1
94	Dec. 21	"	"	"	Alex. McNeil	25	Miner	Explosion of firedamp	17	1	–	–	–	–	1

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List of the Non-Fatal Accidents—*continued*

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95	Nov. 2	Cowdenbeath and Foulford.	Fife	Cowdenbeath Coal Co. (Lim.).	David Pow	35	Runner	Leg broken by screening engine	*	–	–	–	–	1	1
96	Nov. 23	"	"	"	Thos. Clark	20	Miner	Fall of stone	*	–	1	–	–	–	1
97	Nov. 29	"	"	"	Enoch Sneddon	14	Drawer	Crushed by tub	*	–	–	–	1	–	1
98	Dec. 8	"	"	"	Patrick McGraph	30	Dook-runner.	Fell off tub	*	–	–	–	1	–	1
99	Feb. 26	Crofthead and Fallahill	Linlithgow	Peter Thornton	Peter Mullen	32	Fireman	Struck by runaway tub	27	–	–	–	1	–	1
100	Dec. 31	"	"	"	Jas. Carruthers	40	Miner	Fall of roof	†	–	1	–	–	–	1
101	Feb. 5	Dalquhandy	Lanark	Waddell and Son	Jas. Brown	20	"	Fell down shaft	67	–	–	1	–	–	1
102	Nov. 17	"	"	"	Hugh McClusky	40	"	Fall of clay at face	*	–	1	–	–	–	1
103	June 12	Darngavil	"	Darngavil Coal Co. (Lim.).	Daniel Irvine	38	"	Fall of coal	18	–	1	–	–	–	1
104	Feb. 17	Denbeath and Rosie.	Fife	Bowman & Co.	Neil Coulson	16	"	Riding on dook race	40	–	–	–	1	–	1
105	May 16	"	"	"	Wm. Hunter	18	"	Arm broken while descending shaft	‡	–	–	1	–	–	1
106	Jan. 12	Devon and Alloa.	Clackmannan	Alloa Coal Co.	Henry Hunter	49	"	Fall of stone	51	–	1	–	–	–	1
107	" 17	"	"	"	Geo. McGregor	52	Drawer	"	284	–	1	–	–	–	1
108	" 23	"	"	"	Wm. Brodie	34	Miner	Fall of coal	76	–	1	–	–	–	1
109	Feb. 21	"	"	"	James King	15	"	Fall of stone	230	–	1	–	–	–	1
110	June 6	"	"	"	Francis Baxter	42	"	"	85	–	1	–	–	–	1
111	Dec. 10	"	"	"	John Deuchart	36	"	Fall of coal	27	–	1	–	–	–	1

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List of the Non-Fatal Accidents—*continued.*

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112	Apr. 16	Dewshill	Lanark	Coltness Iron Co. (Lim.)	Francis O'Neil	19	Miner	Fall of roof	*	–	1	–	–	–	1
113	Oct. 10	"	"	"	John Moodie	27	"	"	*	–	1	–	–	–	1
114	Feb. 27	Donibristle	Fife	Donibristle Colliery Co.	Wm. Wilson	28	"	Hand crushed between tubs	25	–	–	–	1	–	1
115	Apr. 6	"	"	"	Geo. Stanley	38	"	Fall of roof at face	55	–	1	–	–	–	1
116	June 19	"	"	"	Edward Gibb	60	"	Fall of coal	69	–	1	–	–	–	1
117	Dec. 25	"	"	"	Robert Barclay	28	"	Fall of roof at face	*	–	1	–	–	–	1
118	Jan. 26	Drum	Stirling	Bonnybridge Silica and Fireclay Co.	John Rae	29	Drawer	Fall of clay	12	–	1	–	–	–	1
119	Apr. 19	"	"	"	Daniel Buchanan	30	Miner	"	70	–	1	–	–	–	1
120	May 29	"	"	"	George Buchanan	35	"	Fell off bench	21	–	–	–	1	–	1
121	Aug. 23	"	"	"	Daniel Buchanan	35	"	"	35	–	–	–	1	–	1
122	Apr. 14	Drumshangie	Lanark	Drumshangie Coal Co.	John Jenkins	15	Drawer	Fell off tub	42	–	–	–	1	–	1
123	Nov. 21	Dunnikier	Fife	Walter Herd and Son	David Scott	16	Pony-driver.	"	40	–	–	–	1	–	1
124	May 15	Dunsyston	Lanark	Summerlee & Mossend Iron and Steel Co.	Saml. McGown	50	Miner	Fall of coal at face	124	–	1	–	–	–	1
125	Aug. 6	Dysart	Fife	Earl of Roslyn	Geo. Lumsden	16	Driver	" "	92	–	1	–	–	–	1
126	June 8	Earnock	Lanark	John Watson (Lim.)	Jas. Colvine	29	Chainer	Fell off set	‡	–	–	–	1	–	1
127	Oct. 15	"	"	"	James Moore John Train	26 27	Stokers	Explosion in boiler flues	15 15	–	–	–	–	2	2

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128	Jan. 6	Eddlewood	Lanark	John Watson (Lim.)	Wm. Lyons	19	Driver	Finger crushed by snibble	8	–	–	–	1	–	1
129	" 17	"	"	"	R. Johnston	24	"	Jammed by tub	11	–	–	–	1	–	1
130	" 18	"	"	"	Thos. Cuthbert-son.	17	"	Finger crushed by snibble	12	–	–	–	1	–	1
131	June 20	"	"	"	D. Campbell	20	"	" "	4	–	–	–	1	–	1
132	" "	"	"	"	H. M. Ilwain	16	Miner	Fall of roof	20	–	1	–	–	–	1
133	Nov. 5	"	"	"	Hugh Ross	17	Driver	Jammed by tub	12	–	–	–	1	–	1
134	" 10	"	"	"	Jas. Jackson	28	Brusher	Fall of roof	42	–	1	–	–	–	1
135	Dec. 17	"	"	"	Jas. Bryson	14	Miner	"	11	–	1	–	–	–	1
136	Jan. 4	Elphingstone	Haddington	R. and J. Durie	Jas. Byrne	40	"	Blow with wedge	21	–	–	–	1	–	1
137	" 5	"	"	"	Robt. Johnstone	14	"	Fell off scaffold	35	–	–	–	–	1	1
138	" 22	"	"	"	Jas. Balfour	22	Trimmer	Fell off ladder	†	–	–	–	–	1	1
139	May 2	"	"	"	Philip Flynn	28	Miner	Fall of coal	173	–	1	–	–	–	1
140	" 1	Fairhill	Lanark	Arch. Russell	Jas. McNaughton	20	"	Fall of stone	12	–	1	–	–	–	1
141	" 1	"	"	"	Donald McInnes	36	"	Fall of coal	160	–	1	–	–	–	1
142	Oct. 15	Fauldhouse	Linlithgow	Wm. Dixon (Lim.)	Thos. Lees	21	"	"	†	–	1	–	–	–	1
143	Feb. 2	Fordell	Fife	Fordell Trustees	John Lane	58	Brusher	Hand crushed by cage when riding	102	–	–	1	–	–	1
144	Nov. 27	"	"	"	James Parker	40	Miner	Fall of roof	*	–	1	–	–	–	1

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145	Feb. 28	Forkneuk and Hopetoun.	Linlithgow	Young's Paraffin Light and Mineral Oil Co. (Lim.).	James Strathie	25	Miner	Explosion of fire-damp	17	1	–	–	–	–	1
146	Dec. 17	"	"	"	Patrick Coyle	18	Drawer	Struck his eye with pick point	*	–	–	–	1	–	1
147	Oct. 22	Glebe	Lanark	Thos. Grierson	James Forrest	40	Miner	Fall of roof	2	–	1	–	–	–	1
148	Mar. 22	Glenboig	"	Glenboig Union Fire-clay Co. (Lim.).	Arch. Gegg	22	Drawer	Fall of clay at face	175	–	1	–	–	–	1
149	Sept. 17	Glentore, West	"	Strone Colliery Co.	Matthew Montgomery.	27	Miner	Fall of roof	14	–	1	–	–	–	1
150	Nov. 29	Grangemouth	Stirling	Grangemouth Coal Co.	Dennis Docherty	50	"	Fall of coal at face	*	–	1	–	–	–	1
151	Feb. 14	Greenfield and Whitehill.	Lanark	Arch. Russell	Saml. Courtney	15	Pony-driver.	Fell in front of tubs	26	–	–	–	1	–	1
152	Mar. 12	"	"	"	Wm. Rennie	23	Miner	Fall of roof at face	‡	–	1	–	–	–	1
153	Apr. 23	"	"	"	Saml. Mowbray	40	"	Fall of roof	176	–	1	–	–	–	1
154	June 6	"	"	"	Jas. McDonald	37	"	Fall of coal at face	192	–	1	–	–	–	1
155	" 26	"	"	"	Thos. Clark	40	Joiner	Fell off scaffold	105	–	–	–	–	1	1
156	Feb. 6	Greengairs, North.	"	Samuel Ritchie & Co.	Robt. Cowan	22	Pithead-man.	Jammed by tub	5	–	–	–	–	1	1
157	Nov. 28	Greyrigg	Stirling	Greyrigg Coal Co.	Jane Heeps	15	Pithead worker.	Foot run over by waggon	*	–	–	–	–	1	1
158	Dec. 3	"	"	"	John Tod	28	Miner	Fall of stone	6	–	1	–	–	–	1
159	" 25	"	"	"	James White	15	"	"	6	–	1	–	–	–	1
160	Mar. 5	Greystonelea	Lanark	Hillhouserigg Coal Co. (Lim.).	Jas. Penman	39	Manager	Crushed by bell crank	8	–	–	–	–	1	1

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161	Feb. 5.	Haywood	Lanark	Haywood Gas Coal Co.	John M'Millan	25	Brusher	Fall of roof	†	–	1	–	–	–	1
162	May 1	"	"	"	Wm. Mushat	18	Miner	Explosion of gunpowder	†	–	–	–	1	–	1
163	" 25	"	"	"	Robt. Gibson	29	Labourer	Struck by crane handle	†	–	–	–	–	1	1
164	Feb. 24	Hill of Beath and Dalbeath.	Fife	Fife Coal Co. (Lim.)	Wm. Milne	14	Drawer	Struck by tub	249	–	–	–	1	–	1
165	Apr. 28	"	"	"	James Miller	39	Miner	Fall of coal at face	59	–	1	–	–	–	1
166	May 15	"	"	"	Geo. Beveridge	55	"	Fall of roof	160	–	1	–	–	–	1
167	Feb. 1	Holmes	Linlithgow	Holmes Oil Co. (Lim.)	Thos. Barrett	30	"	Fall of shale	30	–	1	–	–	–	1
168	Jan. 13	Kelty	Fife	Fife Coal Co. (Lim.)	Wm. Pratt	46	"	Fall of coal at face	39	–	1	–	–	–	1
169	Mar. 24	"	"	"	Michael Hodge	16	Pony-driver.	Arm caught in shaft	47	–	–	1	–	–	1
170	June 6	"	"	"	Geo. Brown	39	Miner	Fall of roof	31	–	1	–	–	–	1
171	" 20	"	"	"	Henry Kilgour	30	"	Fall of coal at face	61	–	1	–	–	–	1
172	" 28	"	"	"	Joseph Stewart Henry Toole Thos. Peacock	35 36 40	Sinkers	Explosion of gelignite shots	98 ‡ ‡	–	–	3	–	–	3
173	Sept. 14	"	"	"	Andw. Hain	45	Joiner	Struck by wood thrown by circular saw	111	–	–	–	–	1	1
174	Dec. 7	"	"	"	John Hodge	65	Miner	Fall of coal at face	*	–	1	–	–	–	1
175	Feb. 24	Kingseat	"	Wallace Bros.	Francis Cain	39	"	Arm broken while descending shaft	100	–	–	1	–	–	1
176	Mar. 19	Kinneddar	"	Fifeshire Main Collieries (Lim.)	Jas. Sharp	28	"	Explosion of gunpowder	7	–	–	–	1	–	1

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177	Aug. 27	Kinneddar	Fife	Fifeshire Main Collieries (Lim.).	Alexr. Couper	22	Roadsman	Stepping on cage in motion	*	–	–	1	–	–	1
178	Nov. 2	,,	,,	,,	Jas. Fraser	40	Bottomer	Jammed between tubs	*	–	–	–	1	–	1
179	Mar. 14	Kinneil	Linlithgow	Kinneil Cannel and CokingCoalCo.(Lim.)	Chas. Robertson	19	Drawer	Explosion of fire-damp	12	1	–	–	–	–	1
180	,, 30	,,	,,	,,	Wm. Robertson	28	Miner	,, ,,	2	1	–	–	–	–	1
181	June 8	,,	,,	,,	Wm. Bruce	40	Loco-driver.	Scalded by steam from fractured pipe	18	–	–	–	–	1	1
182	Feb. 27	Knownoble	Lanark	Kerr and Mitchell	Robt. Finlay	33	Bottomer	Fell into cage seat	59	–	–	1	–	–	1
183	June 25	,,	,,	,,	Michael McCormick.	36	Miner	Explosion of fire-damp	24	1	–	–	–	–	1
184	Sept. 3	Lassodie	Fife	Thos. Spowart & Co. (Lim.).	John Cairns	28	Stoker	Fell off boiler seat	65	–	–	–	–	1	1
185	Nov. 12	,,	,,	,,	David Dobbie	19	Pony-driver.	Fall of stone	*	–	1	–	–	–	1
186	,, 15	,,	,,	,,	Robt. Hunter	60	Miner	Fall of coal	*	–	1	–	–	–	1
187	,, 16	,,	,,	,,	John Masterton	55	Labourer	Fell off railway bogie	17	–	–	–	–	1	1
188	,, 16	,,	,,	,,	Thos. Martin	50	Brusher	Fall of roof	54	–	1	–	–	–	1
189	Oct. 29	Lassodie Mill	,,	Rosewell Gas Coal Co. (Lim.).	David Lindsay	24	Miner	,,	†	–	1	–	–	–	1
190	Dec. 15	,,	,,	,,	Peter Faulds	29	Brusher	,,	†	–	1	–	–	–	1
191	Aug. 3	Lathallan	,,	Thos. Brown and Sons	Andrew Duff	42	Miner	Fall of coal	80	–	1	–	–	–	1
192	Dec. 17	,,	,,	,,	Alex. Bisset	20	Drawer	Fall of roof	26	–	1	–	–	–	1
193	June 14	Leven	,,	Fife Coal Co. (Lim.)	Wm. Simpson	18	Miner	,,	131	–	1	–	–	–	1

* Still off work.
† No information.

List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
194	Jan. 31	Linlithgow	Linlithgow	Linlithgow Oil Co. (Lim.).	Thos. M'Gregor	19	Drawer	Fall of roof at face	108	–	1	–	–	–	1
					Terris Haggie	46	Night Oversman		44						
195	Mar. 10	"	"	"	David Spiers	21	Miner	Scalded by overflow of hot water	37	–	–	–	3	–	3
					James Spiers	18	Drawer		37						
196	July 20	"	"	"	Alexander Weir	29	"	Crushed by back balance	*	–	–	–	1	–	1
197	Feb. 21	Little Raith	Fife	Lochgelly Iron and Coal Co. (Lim.).	John Allen	27	Brusher	Fall of roof	14	–	1	–	–	–	1
198	June 6	Loanhead	Edinburgh	Shotts Iron Co.	Robert Hadden	48	Miner	Fell down incline	60	–	–	–	1	–	1
199	Dec. 12	"	"	"	George Tier	18	"	Fall of coal	*	–	1	–	–	–	1
200	Mar. 15	Lochgelly	Fife	Lochgelly Iron and Coal Co. (Lim.).	Robert Penman	35	Brusher	Fall of roof	18	–	1	–	–	–	1
201	May 11	"	"	"	Charles Devine	48	Reddsman	"	56	–	1	–	–	–	1
202	" 18	"	"	"	James Paterson	12	Drawer	"	75	–	1	–	–	–	1
203	June 28	"	"	"	George Pow	60	Labourer	Struck by crane mast	3	–	–	–	–	1	1
204	Nov. 29	"	"	"	David McLean	70	Greaser	Fell off loaded tub	4	–	–	–	1	–	1
205	Feb. 20	Loganlea	Edinburgh	Loganlea Coal Co. (Lim.)	Robert Lind	15	Drawer	Jammed by runaway tubs	240	–	–	–	1	–	1
206	Mar. 5	Longrigg	Lanark	James Nimmo & Co. (Lim.).	David Riddell	19	"	Fell when drawing in front of tub	70	–	–	–	1	–	1
207	April 16	"	"	"	David Murphy	34	Miner	Fall of roof	56	–	1	–	–	–	1
208	" 23	Longriggend	"	"	Alex. Selkirk	23	"	Fall of coal	49	–	1	–	–	–	1

* Still off work.

List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
209	Nov. 6	Longriggend -	Lanark -	James Nimmo & Co. (Lim.).	Michael M'Guire	12	Drawer -	Arm crushed by bell crank - -	*	–	–	–	1	–	1
210	Dec. 4	" -	" -	" -	Alex. M'Donald	36	Miner -	Fall of stone - - - -	*	–	1	–	–	–	1
211	" 29	" -	" -	" -	Alexander Hay -	45	" -	" - - -	*	–	1	–	–	–	1
212	" 31	" -	" -	" -	James Faluna -	56	Trimmer	Fell off waggon - - -	†	–	–	–	–	1	1
213	Mar. 2	Lumphinnans	Fife - -	Cowdenbeath Coal Co. (Lim.)	John Borland -	15	Pony-driver.	Struck by tub - - -	154	–	–	–	1	–	1
214	April 11	Monkland -	Lanark -	Calderbank Steel & Coal Co. (Lim.).	James Mackinlay	14	Assistant wheeler.	Explosion of detonator - -	†	–	–	–	–	1	1
215	June 20	" -	" -	" -	Thomas Weir -	40	Miner -	Explosion of blasting gelatine through defective fuse.	†	–	–	–	1	–	1
216	Sept. 27	" -	" -	" -	John Totten -	35	" -	Explosion of firedamp - - -	†	1	–	–	–	–	1
217	Oct. 19	" -	" -	" -	John Russell -	19	" -	" - -	†	1	–	–	–	–	1
218	May 1	Mossband -	" -	Linridge Coal Co. -	James Stevenson	30	" -	Fall of roof - - - -	41	–	1	–	–	–	1
219	Feb. 2	Mosside and Riddockhill.	Linlithgow	Gavin, Paul and Sons	Hugh Neagle -	15	Drawer -	Breaking of cousie chain - -	112	–	–	–	1	–	1
220	" 7	" -	" -	" -	Walter Wilson -	22	" -	Breaking of haulage rope hose -	36	–	–	–	1	–	1
221	" 15	" -	" -	" -	Archibald Wood	59	Joiner -	Fell off beam - - -	64	–	–	–	–	1	1
222	" 17	" -	" -	" -	James Johnston	33	Miner -	Fall of coal and roof - - -	120	–	1	–	–	–	1
223	" 17	" -	" -	" -	Harry Thomson	30	" -	Fall of roof - - - -	48	–	1	–	–	–	1
224	Mar. 16	" -	" -	" -	Jeremiah Curran	17	Drawer -	Slipping of false link in chain -	35	–	–	–	1	–	1
225	April 3	" -	" -	" -	John Goudie -	20	" -	Breaking of false link in chain - -	‡	–	–	–	1	–	1

* Still off work.
† No information.
‡ Did not resume work at colliery.

List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
226	Jan. 6	Motherwell	Lanark	John Watson (Lim.)	Alex. Thomson	64	Miner	Fall of roof	256	–	1	–	–	–	1
227	June 14	"	"	"	James Aitchman	31	Runner	Crushed by tub	70	–	–	–	–	1	1
228	Jan. 5	Murdostoun	"	John McAndrew and Co.	James B. Kerr	14	Pony-driver.	Fell in front of loaded set	23	–	–	–	1	–	1
229	Feb. 28	"	"	"	James Kane	19	Brusher	Fall of stone	60	–	1	–	–	–	1
230	Nov. 6	Neilsland	"	John Watson (Lim.)	John Weatherall	45	Bricklayer	Fell down chimney stack	†	–	–	–	–	1	1
231	Feb. 16	Newbattle	Edinburgh	Lothian Coal Co. (Lim.).	Patrick Bryce	30	Miner	Fall of stone down spout	179	–	1	–	–	–	1
232	Mar. 3	"	"	"	John Henderson	30	"	Fall of coal	101	–	1	–	–	–	1
233	" 20	"	"	"	George Muir	26	Bricklayer	Fell off scaffold	17	–	–	–	–	1	1
234	April 2	"	"	"	Peter Johnstone	46	Miner	Fall of coal	98	–	1	–	–	–	1
235	June 27	"	"	"	Morris Coll	26	"	Fall of stone	*	–	1	–	–	–	1
236	Dec. 6	"	"	"	Thomas Stewart	19	Assistant bottomer.	Struck by bolt falling down shaft	*	–	–	1	–	–	1
237	" 6	"	"	"	Nicol King	36	Miner	Explosion of fire-damp	0	1	–	–	–	–	1
238	Nov. 16	Niddrie	"	Niddrie and Benhar Coal Co. (Lim.).	James Jack	73	"	Jammed by tubs	*	–	–	–	1	–	1
239	Mar. 9	Oakbank	"	Oakbank Oil Co. (Lim.).	David Kidd	13	Greaser	Fell off scaffold	154	–	–	–	–	1	1
240	Dec. 18	"	"	"	Alex. Wilson	48	Fireman	Explosion of fire-damp	14	1	–	–	–	–	1
241	Feb. 19	Pentland and Straiton.	"	Clippens Oil Co. (Lim.).	Patrick Broggan	25	Miner	"	‡	1	–	–	–	–	1
242	April 29	"	"	"	Thomas Cherrie	28	Chainer	Jumped on bogie in motion	†	–	–	–	1	–	1

* Still off work.
† No information.
‡ Did not resume work at colliery.

List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
243	Apr. 30	Pentland and Straiton.	Edinburgh	Clippens Oil Co. (Lim.).	Thomas Coleman	34	Miner -	Explosion of firedamp - -	63	1	–	–	–	–	1
244	May 8	„ -	„ -	„ -	Thomas Mash -	50	Fireman -	„ - -	‡	1	–	–	–	–	1
245	„ 22	„ -	„ -	„ -	James Reid -	25	„ -	Crushed when riding on water chest -	‡	–	–	–	1	–	1
246	June 12	„ -	„ -	„ -	William Hull -	33	Miner -	Explosion of fire-damp - -	‡	1	–	–	–	–	1
247	„ 14	„ -	„ -	„ -	James Howden -	48	Roadsman	Struck by tubs - - - -	113	–	–	–	1	–	1
248	„ 24	„ -	„ -	„ -	William Wells -	36	Bottomer	Thrown off set - - -	21	–	–	–	1	–	1
249	„ 27	„ -	„ -	„ -	Gilbert Wilson -	29	Miner -	Struck by shale from shot - -	82	–	–	–	1	–	1
250	Aug. 31	„ -	„ -	„ -	Patrick Gaffney	28	„ -	Explosion of firedamp - -	†	1	–	–	–	–	1
251	July 9	Philpstoun -	Linlithgow -	James Ross and Co. -	Daniel Foley -	31	„ -	Explosion of gunpowder - -	60	–	–	–	1	–	1
252	Mar. 21	Pirnie -	Fife - -	Fife Coal Co. (Lim.)	David Gillon -	16	Drawer -	Crushed by tubs - - -	218	–	–	–	1	–	1
253	Nov. 29	„ -	„ - -	„ -	Walter Dunsire -	35	Miner -	Fall of roof - - - -	*	–	1	–	–	–	1
254	Jan. 13	Polton -	Edinburgh -	Lothian Coal Co. (Lim.).	Michael Connor	23	Drawer -	Fall of stone - - - -	‡	–	1	–	–	–	1
255	Nov. 30	„ -	„ -	„ -	Wm. Robertson -	32	Brusher -	„ - - - -	*	–	1	–	–	–	1
256	Feb. 8	Prestongrange	Haddington	Prestongrange Coal & FirebrickCo.(Lim.).	AlexanderHowie	19	Drawer -	Drawing before tubs - -	†	–	–	–	1	–	1
257	„ 13	„ -	„ -	„ -	Thos. Bellaney -	18	„ -	Fall of clay - - - -	†	–	1	–	–	–	1
258	May 18	„ -	„ -	„ -	John Edmond -	22	„ -	Fall of coal - - - -	†	–	1	–	–	–	1
259	June 8	„ -	„ -	„ -	Samuel Spencer -	29	Miner -	Fxplosion of fire-damp - - -	†	1	–	–	–	–	1

* Still off work.
† No information.
‡ Did not resume work at colliery.

List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
260	July 25	Pumpherston	Edinburgh	Pumpherston Oil Co. (Lim.).	John Deignan	22	Drawer	Fall of roof	7	–	1	–	–	–	1
261	Sept. 4	"	"	"	James Laird	39	Miner	Explosion of shot	111	–	–	–	1	–	1
262	Oct. 11	"	"	"	Neil Hanlon	22	"	Explosion of fire-damp	49	1	–	–	–	–	1
263	Nov. 21	Quarter	Lanark	Colin Dunlop & Co.	Jas. Richardson	18	"	Fall of roof	‡	–	1	–	–	–	1
264	May 17	Rawyards	"	Rawyards Colliery Co. (Lim.).	John Scott	26	Fireman	Explosion of fire-damp	15	1	–	–	–	–	1
265	" 28	"	"	"	Jas. Weir	17	Miner	Fall of stone	21	–	1	–	–	–	1
266	Dec. 20	"	"	"	Jas. McCulloch Arthur McCulloch	50 22	Miners	Explosion of fire-damp	1 5	2	–	–	–	–	2
267	Feb. 6	Redding	Stirling	Redding Colliery Co.	Wm. Townsley	35	Oversman	Fell off ladder	8	–	–	–	1	–	1
268	Oct. 4	Rochsolloch	Lanark	Airdrie Coal Co.	Jas. Jackson	40	Miner	Fall of roof	*	–	1	–	–	–	1
269	" 10	"	"	"	Alexr. Laird	50	"	Fall of top coal	80	–	1	–	–	–	1
270	Dec. 21	Rosebank	Fife	John Ninmo and Son	Wm. Meiklejohn	46	"	Knocked head against roof	†	–	–	–	1	–	1
271	Jan. 22	Ross	Lanark	Thos. Barr	Jas. Stewart	39	"	Fall of coal	69	–	1	–	–	–	1
272	" 23	" No. 2	"	Coltness Iron Co. (Lim.).	Adam Bryson	23	Chainer	Crushed while riding on set	105	–	–	–	1	–	1
273	Nov. 22	Roughrigg East	Stirling	Robt. Forrester	John Clark	26	Brusher	Fall of stone	*	–	1	–	–	–	1
274	Mar. 3	Seafield	Linlithgow	Pumpherston Oil Co. (Lim.).	John Brown	21	Drawer	Crushed by back balance	180	–	–	–	1	–	1
275	May 9	"	"	"	George Inglis	21	"	Fall of roof	8	–	1	–	–	–	1

* Still off work.
† No information.
‡ Did not resume work.

List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured.					
										Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
276	June 14	Seafield -	Linlithgow	Pumpherston Oil Co. (Lim.).	Robt. Bryce -	21	Miner -	Explosion of fire-damp - -	42	1	–	–	–	–	1
277	July 7	Shawfield -	Lanark -	Wilson's and Clyde Coal Co. (Lim.).	Wm. Russell -	55	Oversman	Fell in engine-house - - -	†	–	–	–	–	1	1
278	Sept. 14	" -	" -	" -	John Kerr -	13	Miner -	Fall of roof - - - -	†	–	1	–	–	–	1
279	Oct. 15	Sheardale -	Clackmannan	Rob. McAllister and Sons.	Martin Gray -	35	Brusher -	" - - -	14	–	1	–	–	–	1
280	Jan. 15	Shieldhill -	Stirling -	Carron Co. - -	Malcolm Neil -	29	Miner -	Coal falling down shaft - -	13	–	–	1	–	–	1
281	Apr. 4	" -	" -	" - -	Wm. Grant -	24	" -	Fall of coal - - - - -	179	–	1	–	–	–	1
282	May 11	" -	" -	" - -	John Jamieson -	24	Brusher -	Finger crushed by pinch - -	23	–	–	–	1	–	1
283	Dec. 10	" -	" -	" - -	Jas. Campbell -	18	Labourer	Hand crushed between waggons -	*	–	–	–	–	1	1
284	" 29	" -	"	" - -	Joseph Wilson -	54	Night pit headman.	Jammed between safety gate and pit-head roof.	*	–	–	–	–	1	1
285	Aug. 25	Shotts - -	Lanark -	Shotts Iron Co. -	Francis Murphy	30	Miner -	Fall of roof - - - -	63	–	1	–	–	–	1
286	Nov. 6	Skellyton -	" -	Hamilton Coal Co. -	Henry Coulter -	22	" -	Explosion of fire-damp - - -	25	1	–	–	–	–	1
287	Apr. 18	Southrigg -	" -	A. M. Graham -	Alexr. Allan -	45	Pit head-man.	Crushed by tub - - -	11	–	–	–	–	1	1
288	June 15	Springbank -	" -	Springbank Colliery Co. (Lim.).	Jas. Marshall -	45	Brusher -	Explosion of fire-damp - - -	8	1	–	–	–	–	1
289	Oct. 19	Struther -	" -	Struther Coal Co. -	Daniel Moonie -	54	Miner -	Fall of stone - - -	*	–	1	–	–	–	1
290	Apr. 11	Swinhill -	" -	Geo. Miller and Sons	Hy. Cuthbertson	26	Engine-man.	Caught by machinery - -	48	–	–	–	–	1	1
291	Dec. 8	" -	"	" -	John Stewart -	49	Brusher -	Fall of roof - - - -	*	–	1	–	–	–	1
292	Jan. 23	Townhill -	Fife -	Townhill Coal Co. -	Thos. Robertson	50	Oversman	Fell down staple - - -	91	–	–	–	1	–	1

* Still off work.
† No information.
‡ Did not resume work at colliery.

List of the Non-Fatal Accidents—*continued.*

No. of Accidents.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Persons injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
293	Nov. 9	Udston -	Lanark -	Udston Coal Co. (Lim.).	John Barrowman	25	Bottomer	Crushed by tub - - -	‡	–	–	–	1	–	1
294	Dec. 28	Vogrie -	Edinburgh -	Vogrie Colliery Co. -	James Miller -	19	Drawer -	„ - - -	*	–	–	–	1	–	1
295	„ 31	„ -	„ -	„ -	John Crawford -	35	Miner -	Fall of coal and stone - - -	*	–	1	–	–	–	1
296	Mar. 24	Wellsgreen -	Fife -	Fife Coal Co. (Lim.)	Thos. Morris -	26	Drawer -	Fall of roof - - - -	11	–	1	–	–	–	1
297	Apr. 21	„ -	„ -	„ -	Alex. Hunter -	20	Miner -	Fall of coal at face - - -	140	–	1	–	–	–	1
298	May 1	„ -	„ -	„ -	Jas. Fairful -	47	„ -	Crushed by tubs - - -	41	–	–	–	1	–	1
299	Mar. 24	Wemyss -	„ -	R. G. E. Wemyss -	Wm. Christie -	56	„ -	„ - - -	219	–	–	–	1	–	1
300	June 9	„ -	„ -	„ -	Thos. Nicoll -	28	„ -	Fall of coal and stone - -	142	–	1	–	–	–	1
301	July 5	Whitehill -	Edinburgh -	Lothian Coal Co. (Ltd.)	Wm. Hogg -	41	Labourer	Fell off waggon - - - -	5	–	–	–	–	1	1
302	Dec. 8	„ -	„ -	„ -	W. Cunningham	20	Drawer -	Fall of roof - - - -	†	–	1	–	–	–	1
303	May 15	Wishaw -	Lanark -	Glasgow Iron and Steel Co. (Lim.)	Allan Aitken -	45	Pony-driver.	Struck by tub - - - -	145	–	–	–	1	–	1
304	Jan. 11	Wilsontown -	„ -	William Dixon (Lim.)	James Baird -	14	Miner -	Fall of stone - - - -	†	–	1	–	–	–	1
305	Mar. 5	„ -	„ -	„ -	James Weir -	30	Roadsman	Jammed by pump back balance -	†	–	–	–	1	–	1
306	May 2	Woodend -	Linlithgow -	Coltness Iron Co. (Ltd.)	Alex. Easton -	18	Miner -	Jammed between tubs - - -	168	–	–	–	–	1	1
									Totals	32	142	20	89	39	322

* Still off work.
† No information.
‡ Did not resume work at colliery.

APPENDIX D.

METALLIFEROUS MINES REGULATION ACT, 1872.

FATAL ACCIDENTS, and loss of Life arising therefrom, in the East Scotland District, during the Year 1894.

No. of Accidents.	Date.	Name of Mine.	Where situate (County).	Owner's or Company's Name.	Persons killed.	Reputed Age.	Occupation.	Cause of Death, and Remarks.	No. of Lives lost.					
									Explosions of Fire-damp.	Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1	Aug. 7	Murieston	Edinburgh	Wm. Cunningham & Son	George Sneddon	66	Foreman	Fell over bench	–	–	–	1	–	1
2	Sept. 25	Bowden	Linlithgow	Bowden Lime Co. (Ltd.)	Alexander Dales	43	Miner	Fall of limestone	–	1	–	–	–	1
								Total	–	1	–	1	–	2

APPENDIX E.

METALLIFEROUS MINES REGULATION ACT, 1872.

List of the Non-fatal Accidents causing serious personal injury, or arising from explosions of Gas, or of any explosive, or of any Steam Boiler in the East Scotland District, during the Year 1894.

No. of Accident.	Date.	Name of the Mine or Colliery.	Where situate (County).	Name of the Owner or Company.	Person injured.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Number of Days off Work, including Sundays and Holidays.	Persons seriously injured.					
										Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1	Dec. 17	Westfield - -	Edinburgh -	Wm. Baird & Co. - -	Henry Nicol -	26	Drawer -	Jammed between tubs -	*	–	–	–	1	–	1
								Total -		–	–	–	1	–	1

* Still off work.

Reports of Inspectors Assisting.

Bonny, Gardenside,
Uddingston, Glasgow,
14th February 1895.

Sir,

In pursuance of section 20 of the Metalliferous Mines Act, 1872, I have the honour to report to you that during the past year I have exercised the duties of Inspector in the district of East Scotland, and that in so doing I have acted under the directions of Mr. J. B. Atkinson, the Inspector for that district.

I have, &c.,
ROBERT McLAREN.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall, London.

77, Montgomerie Street, Glasgow,
14th February 1895.

Sir,

In pursuance of section 20 of the Metalliferous Mines Act, 1872, I have the honour to report to you that during the past year I have exercised the duties of Inspector in the district of East Scotland, and that in so doing I have acted under the direction of Mr. J. B. Atkinson, the Inspector for that district.

I have, &c.,
HUGH JOHNSTONE.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

REPORT

OF

W. N. ATKINSON, Esq., H.M. INSPECTOR OF MINES

FOR THE

NORTH STAFFORDSHIRE DISTRICT (No. 10),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

**The Coal Mines Regulation Act, 1887,
the Metalliferous Mines Regulation Acts, 1872 and 1875,
and the Slate Mines (Gunpowder) Act, 1882;**

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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1895.

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REPORT of the INSPECTOR OF MINES for the DISTRICT comprising NORTH STAFFORDSHIRE, CHESHIRE, and SHROPSHIRE, for the Year ending 31st December 1894.

Newcastle, Staffordshire,
19th February 1895.

SIR,

As required by section 43 of the Coal Mines Regulation Act, 1887, and section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to submit the following report on the inspection of mines in the North Stafford Inspection District during the year 1894.

The district comprises the counties of Cheshire and Shropshire, and the northern portion of the county of Staffordshire. In Cheshire the minerals won by mining are coal, fireclay, ganister, limestone, and rock salt; in Shropshire, coal, fireclay, red tile clay, ironstone, limestone, barytes, and lead and zinc ores; in North Staffordshire, coal, fireclay, ironstone, oil shale, and gypsum.

A list of the mines, mine owners, managers, &c. of the district, together with those of the other inspection districts, is published in a separate volume.

PART I.—MINES UNDER THE COAL MINES REGULATION ACT.

PERSONS EMPLOYED AND MINERALS RAISED.

TABLE showing the PERSONS EMPLOYED and MINERALS RAISED at the MINES, under the Coal Mines Regulation Act, in the North Stafford Inspection District during the year 1894.

Counties.	Number of Persons employed.			Tons of Minerals raised.						
	Under-ground.	Above ground.*	Total.	Coal.	Fireclay.	Ironstone.	Oil Shale.	Other Minerals. Amount.	Other Minerals. Description.	Total.
Cheshire	2,242	533	2,775	781,637	12,568	—	—	920	Ganister	795,125
Shropshire	2,855	924	3,779	683,025	11,673	46,640	—	398 54,731	Pyrites Red Clay	796,467
Staffordshire, North	14,888	4,460	19,348	4,954,341	10,696	815,368	2,602	49	Mineral Oil	5,783,056
TOTALS 1894	19,985	5,917	25,902	6,419,003	34,937	862,008	2,602	56,098	—	7,374,648
TOTALS LAST YEAR, 1893.	19,520	5,917	25,437	6,165,859	39,705	825,203	4,036	52,125	—	7,086,928

* Including persons employed on private branch railways and tramways and in washing and coking coal on premises adjacent to or belonging to the mines; of whom there were 789 in 1894.

The above figures are compiled from the statutory returns made by the mine-owners. Details as to the sex and ages of the persons employed are given in Table No. 2 of the Summaries.

Compared with the previous year there is a slight increase in the number of persons employed in Cheshire and North Stafforshire, and a nominal decrease in Shropshire, the aggregate increase of 465 persons being an increase of less than 2 per cent. There is an aggregate increase in the quantity of minerals produced of 287,720 tons, or rather more than 4 per cent., the bulk of the increase being in coal in Cheshire, where the wages dispute in 1893 considerably diminished the output.

The average output of minerals per person employed *underground* in the district was 369 tons, the corresponding figure for the United Kingdom being 350 tons. For the previous year the figures were 363 tons for this district, and 319 tons for the United Kingdom.

Accidents.

A deep gloom was cast over North Staffordshire in January 1895 by the disaster at Audley Colliery, where 77 lives were lost by a sudden irruption of water. The record of that accident, the inquiry into which is not yet complete, will appear in next year's report.

It is, however, satisfactory to report now that the loss of life in the district was less during the year 1894 than in any previous year. The total number of accidents reported during the year 1894, which on inquiry proved to be accidents coming within the Coal Mines Act, and including accidents on private branch railways, &c. was 206, the corresponding number for the previous year being 232.

During 1894 there were 26 fatal accidents, and 180 non-fatal accidents, resulting in the death of 27 persons, and injuries to 200 persons; the figures for the previous year being 41 deaths, and 200 persons injured.

The following figures afford a comparison of the death rate, &c. in mines under the Coal Mines Regulation Act, in this district and in the United Kingdom, during the year 1894, including the persons employed on private branch railways, &c. and accidents to such persons:—

——	In the North Stafford Inspection District.	In the United Kingdom.
Death rate from accidents per 1,000 persons employed	1·042	1·598
Number of persons employed per fatal accident	996	867
Number of persons employed per life lost	959	626
Tons of minerals wrought per fatal accident	283,640	245,327
Tons of minerals wrought per life lost	273,135	176,975

These figures show the district to occupy an unusually favourable position as compared with the whole country; and, considering the dangerous character of the district, they form a very satisfactory record for the year 1894.

The following tables show the number and causes of the accidents, the counties in which they occurred, and the number of persons killed and injured:—

Fatal Accidents.

Counties.	Fatal Accidents.						Deaths.					
	Explosions of Fire-Damp and Coal Dust.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	On the Surface.	Total.	Explosions of Fire-Damp and Coal Dust.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	On the Surface.	Total.
Cheshire	—	2	—	—	1	3	—	2	—	—	1	3
Shropshire	—	2	1	2	—	5	—	2	1	2	—	5
Staffordshire, North	1	9	1	2	5	18	1	10	1	2	5	19
Totals 1894	1	13	2	4	6	26	1	14	2	4	6	27
Total last year, 1893	1	18	6	7	9	41*	1	18	6	7	9	41*

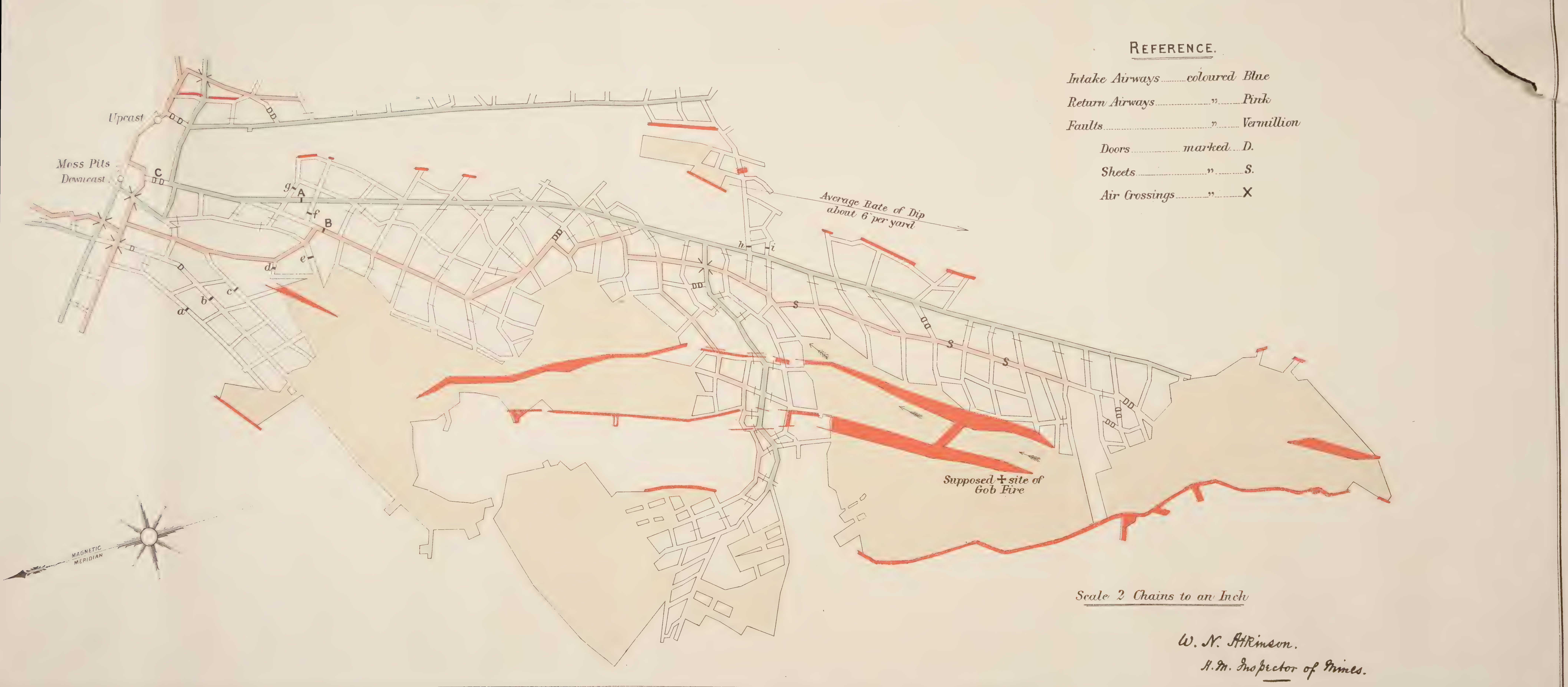
* Including 2 accidents and 2 deaths on private branch railways. There were no such accidents in 1894.

Non-Fatal Accidents.

Counties.	Non-Fatal Accidents.						No. of Persons injured, including those injured in Accidents fatal to other Persons.					
	Explosions of Fire-Damp and Coal Dust.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	On the Surface.	Total.	Explosions of Fire-Damp and Coal Dust.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	On the Surface.	Total.
Cheshire	—	6	—	6	4	16	—	7	—	6	4	17
Shropshire	—	19	2	13	5	39	—	20	5	13	5	43
Staffordshire, North	—	57	5	43	20	125	12	60	5	43	20	140
Totals, 1894	—	82		62	29	180	12	87	10	62	29	200
Totals last year, 1893	4	87	9	61	30	191	4	90	9	67	30	200

HARECASTLE AND WOODSHUTTS COLLIERIES, MOSS PITS EXPLOSION. 16TH OCT. 1894.

PLAN OF PART OF THE WORKINGS IN THE BULLHURST SEAM.



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EXPLOSIONS OF FIRE-DAMP AND COAL DUST.

One accident, causing one death and serious injury to one person and slight injuries to 11 others. The following are the particulars of the explosion:—

Date.	Hour.	Colliery.	Where situated.	Seam.	Barometer.*		No. Killed.	No. Injured.
					Height	Rising or Falling.		
1894. 16 Oct. -	5.30 p.m. and 9.30 p.m.	Harecastle and Woodshults Collieries Moss Pits.	Harecastle	Bullhurst -	29·90	Steady	1	12

* As registered by a self-recording aneroid barometer at Newcastle-under-Lyme, 430 feet above sea-level.

Harecastle and Woodshults Collieries—Moss Pits Explosion.—The explosion, or rather a series of three explosions, were due to a gob-fire in the Bullhurst Seam, won at a depth of 240 yards. About 3 a.m. on Monday morning the 15th October a fireman detected symptoms of a gob-fire, in the "stable engine dip district" of the Bullhurst Seam, and sent for the manager. The district was examined, and smoke was found issuing from a goaf. The seat of combustion could not be exactly located, but it was believed to be about the place marked + on plan. It was decided to stop the district off at once by building stoppings in the intake and return airways, which were the only open roads connecting the district with other parts of the pit; strong stoppings of timber and brickwork already existing in all the other connecting roads, as shown on plan at *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*. The new stoppings were built at the points marked A. and B. and were finished about 5.30 p.m. on the 15th October. They were built with bricks and mortar and were 14 inches thick. Their erection completely cut off the ventilation of the district. Nothing further occurred until about 5.30 p.m. on the 16th October, when there was an explosion in the isolated district. At this time the ordinary afternoon shift of 20 men were in the pit. Three of them were at the top of the "stable engine dip," 155 yards from the stopping, at the point marked C. on the plan. They were knocked about by a blast of hot air mixed with smoke and dust, but were not seriously injured, and were not burnt, and two doors near them were not displaced. The rest of the men were in other parts of the workings, and only felt a "suck," or check, to the ventilation. The men all came out of the pit, and the manager and other officials were summoned. An examination was made, and it was found that the recently erected stoppings in the intake and return airways (at A. and B.) had been blown out and completely demolished, but the older and stronger stoppings for isolating the district were undisturbed. It was decided to rebuild the stoppings which had been blown out, and while preparations were being made to replace them, a second explosion took place at 9.30 p.m. At this time there were a number of men at the places where the stoppings had been blown out, and one of them, a fireman, named William Elliman, was killed. All the others escaped without serious injury, except one named Samuel Lowndes, both of whose legs were broken. Elliman was near the stopping in the return airway, and when the men fled to the shaft at the second explosion, it was not observed that he was missing until they reached the surface. Mr. Larmouth, the manager, J. Bellfield, Jun., under manager, and a miner named J. Higgins, at once returned and brought Elliman out of the pit. He was apparently dead, and artificial respiration was tried without effect. The doctor thought his death was due to fracture of the skull. Lowndes was taken out of the pit immediately after the second explosion. He said he had been blown over and over, and his legs were probably broken by catching some obstruction. It was observed that the doors at the top of the engine dip, at C., were not blown out by the second explosion. The men in the pit at that time described it as a hot suffocating blast, with much dust and smoke. They saw no flame, but four of them were slightly burnt, or scorched to the extent of raising blisters, or blushes on the faces and arms, but their hair was not singed. Several others were bruised and suffered from the effects of the after-damp.

After the second explosion it was decided that no one should go down the pit until next day, as it seemed not unlikely there might be more explosions. The prudence of this course was shown when about 1 a.m. a terrific explosion occurred, accompanied by

a loud report, and the ejection of clouds of smoke and dust from both shafts. A wooden erection round the top of the upcast shaft was partially destroyed, and the fan was injured, and one of the cages in the downcast shaft was damaged. After this it was decided to seal the bottom of both shafts, and this was done on the 17th October, by filling the shafts with debris for about 15 yards above the insetts, with clay and water on the top. The pits have not yet been reopened. Eighteen horses and ponies were lost.

The inquest on William Elliman was held on the 8th November 1894, and the jury returned a verdict of "accidental death," and recommended that in future the ordinary workmen should be withdrawn while gob-fires were being built off, and that the stoppings should be strengthened, these being the chief points to which attention was directed by the coroner and myself, as it appeared that the ordinary work of the pit had been carried on, so far as practicable, during the interval between the discovery of the gob-fire and the first explosion, and as it seemed doubtful whether there was any definite intention to strengthen the stoppings. The manager said he had previously dealt with several gob-fires in the same way as he treated this fire, and without any accident.

Although only one life was lost by this explosion, it resulted in serious pecuniary loss to the owners of the colliery, and under slightly different circumstances a large loss of life might have been caused. The principal explosion, I have no doubt, was due to the ignition of coal dust, as well as fire-damp, and may have extended into several districts of the mine. The liability of some of the fiery and dusty seams of North Staffordshire to spontaneous combustion, is a source of great danger. and the cause of constant anxiety to the owners and managers of collieries where such seams are worked. In dusty pits the risk of a local explosion of fire-damp being extended by coal dust renders it necessary to withdraw the workmen from other parts of the mine so long as that risk prevails, and this explosion should dispel the idea, if such exists, that the danger is past when the seat of the fire is only isolated by stoppings which, although they may exclude air, are liable to be blown out by an internal explosion. Safety can only reasonably be relied on when such stoppings have been so strengthened as to enable them to withstand any explosion which may take place in the sealed-off portion of the mine. Usually the quickest and most effectual way of so strengthening the stoppings, if on level or dipping roads, is simply to stow up the road in front of them for 10 to 20 yards with debris, formed of material not liable to heat spontaneously. Such solid stowing offers an enormous resistance to displacement, sufficient, I believe, to withstand the most violent mine explosion. If this method is not practicable, other means should be resorted to according to the circumstances.

Falls of Roof and Sides.

Ninety-five accidents from falls of roof and sides were reported during 1894, by which 14 persons were killed, and 87 injured. The record for the previous year was 105 accidents, 18 persons killed, and 90 injured.

About 77 per cent. of the accidents by falls occurred at or adjacent to the working faces, about 14 per cent. on roads during repairs, enlargement, &c., and about nine per cent. on roads on which the victims were simply working or passing. So that in more than 90 per cent. of the accidents the security of the roof and sides depended, to a great extent, on the victims themselves, or on their fellow workmen, and this observation applies equally to previous years. Falls of roof and sides appear the most hopeless class of mining accidents. Those on the scene before an accident usually protest that the place appeared and sounded quite safe, and while this may have been so in many cases, it only makes it clearer that apparent safety in the absence of supports to the roof and sides is little to be relied on.

Much may be done to prevent these accidents by the firemen and other officials obliging the miners to make their working places as safe as possible, and they are armed with ample authority to do so Considering the large proportion of these accidents which occur at the working faces, where the bulk of the miners are engaged for the longest time, and where new surfaces are constantly exposed, it would appear reasonable to hope that if what is described as "systematic timbering," was enforced at all working faces, the number of accidents from falls might be materially reduced. One of the Special Rules for North Staffordshire collieries reads as follows :—"He (the certificated manager) shall adopt a uniform system of timber propping at stated distances

"in the faces of work under his charge, or in any part of the mine, which in his "judgment requires it."

This rule has not yet been generally acted on, but regulations of the kind referred to have been framed by the managers at several large collieries, and I hope to see the practice considerably extended, even if it is not made compulsory, as may hereafter be thought necessary.

Shaft Accidents.

There were nine shaft accidents during the year, resulting in two deaths, and injuries to 10 persons.

The fatal shaft accidents were as follows:—

At Adderley Green Colliery on the 6th July, William Bailey, an underground ostler, was drowned in the sump at the bottom of the shaft. No one saw how he got into the sump. He went down the pit at 5.15 p.m. with three miners, and after they left the cage, a lifting gate for fencing the sump was lowered into its place, and in addition to this there were rails across the road, a few yards from the shaft, which were also left in position. Bailey proceeded to the stables about 90 yards from the shaft, where he was seen by a waggoner named Weaver. He sent Weaver to fetch a bucket, and when Weaver returned in about five minutes, he could not find Bailey. Weaver then went to work and returned to the shaft about 6 p.m., and saw that the rail fence was down, and the lifting gate raised, leaving the sump unfenced. He also missed a full tub which he had left near the shaft. He did not suspect what had happened, but there is no doubt that Bailey and the tub were then in the sump, where they were found next morning. No reason could be discovered why Bailey should have returned to the shaft or interfered with the fences or tub.

On September 18th an over-winding accident occurred at the Barracks pit, near Wellington, Salop, belonging to the Lilleshall Company, Limited, resulting in the death of one man, and serious injury to three others. This colliery is worked by two shafts, known as the Double Coal or No. 1 pit, and the Blackstone or No. 2 pit, situated about 10 feet apart, with one cage in each shaft, both cages being controlled by the same winding engine. The Blackstone shaft is sunk to the Clod coal seam at a depth of 260 yards; but winding is only carried on from the Blackstone ironstone seam at a depth of 184 yards. The Double Coal shaft is 220 yards deep, to the Double Coal seam, from which point coals are drawn. Both cages run to the bottom of the shafts they are in, the diameter of the winding drums being 9 feet 11 inches and 8 feet 2 inches respectively. The winding engine is a horizontal single cylinder slide valve engine, with loose eccentric; the drums are on second motion shaft, geared three to one. A brake is fitted to the fly-wheel, and another powerful brake to the winding drum, which can be applied by the engineman by means of a lever near his post in the engine house. There is a dial indicator fixed on the engine to show the position of the cages in the shafts, and as the winding apparatus is not provided with any automatic contrivance to prevent overwinding, the indicator is marked corresponding to a depth of 50 yards from the surface in the shafts, beyond which point the cages are not to be drawn up at a greater speed than three miles per hour, in accordance with General Rule 26 of the Mines Act, the depth, 50 yards from the surface, being fixed by the Special Rules established at the colliery. The ordinary speed of winding is slow, averaging between four and five miles per hour.

Attached to the indicator was a gong, which struck when the cage was about 1½ strokes from the bank, and in addition there was a bell which rung during several strokes of the engine, when the cage was about 20 strokes from the top; but this bell would only ring in case the cage started from the bottom.

It appeared that during the working shift the winding engineman found that the "catches" for the cage to rest on at the Blackstone inset in No. 2 pit, were not working properly. He reported the matter to the under-manager, Charles Sylvester, who made arrangements for the "catches" to be examined and repaired after winding operations had ceased at 2.30 p.m. At that time, the winding engineman, John Howells, after he had drawn the men out of the Blackstone seam, was relieved by a spare engineman, Martin James Stevens, who had been for some time previous to this date working the winding engine during the night shift, while men had been doing repairs in the shaft. Before taking the men down to examine the Blackstone inset "catches," Sylvester, the under-manager, descended the Double Coal shaft, and ordered the

"hooker-on" at that inset not to send up any more loaded tubs, as men were going to work at the Blackstone inset. He then descended the Blackstone shaft, accompanied by James Williams, Westley Pitchford, John Howells (the winding engineman), who asked and obtained permission to accompany them, and two other men, and they made an examination of the catches, and saw what repairs were required. While doing this, they were raised and lowered several times through the catch frames, and for two or three yards above and below, and would be occupied for about 20 minutes, and during this time the cage in the Double Coal shaft would be moved up and down in the shaft about 70 yards below the surface. After finding what repairs were necessary, Sylvester, James Williams, John Howells, and Westley Pitchford, got into the cage to ascend to the surface, the proper signal being given to the surface that men were about to ascend, and the reply signal from the surface received before the cage was moved. While ascending the shaft, however, the men noticed that the speed of the cage was increasing, and continued increasing until the surface was reached. Daniel Poppitt, a charter master, was near the top of the shaft, and observed that the rope was ascending too fast, and as the cage approached the surface he shouted to the men, "Jump for your lives," and afterwards, at the risk of his own life, he dragged one of them from where the cage might have fallen on to him. Immediately, on reaching the surface, Sylvester, Howells, and Pitchford succeeded in jumping from the cage, but James Williams was carried up to the pulley wheel in the cage, which was drawn on to the wheel, and then fell to the ground. Williams fell from the cage when it was on the wheel, and was picked up dead. Sylvester, Howells, and Pitchford all sustained severe injuries in jumping from the cage.

The adjourned inquest on James Williams, deceased, was held by Mr. T. V. Lander, the coroner, on October 3rd, when after a very lengthy inquiry the jury returned a verdict of manslaughter against Martin James Stevens, the engineman in charge of the winding engine at the time of the accident, who was represented by a solicitor, and advised not to give evidence himself.

On October 31st, before the Newport (Salop) Bench of Magistrates (S. T. H. Burne, Esq., and Colonel Masefield), Mr. R. A. Craig, solicitor, of Shrewsbury, prosecuting on behalf of the Treasury, Stevens was charged with manslaughter, and was committed by the magistrates for trial at the assizes. The case occupied the whole day, from 11.0 a.m. to 9.0 p.m. It came out in the evidence that the hooker-on at the "Double Coal" inset had put a loaded tub on the cage after Sylvester, the under-manager, had been down to him to tell him not to send any tubs up, but he denied that Sylvester had given him orders not to send anything up. If this loaded tub was on the "Double Coal" cage, it would require greater care on the part of the engineman to control the working of the engine while drawing men up from the Blackstone Seam.

The case was again tried at the Shrewsbury Assizes, before Mr. Justice Matthews, when the jury returned a verdict of "Not guilty," and Stevens was dismissed.

Stevens was a steady, competent engineman, but there is no doubt the accident was due to a momentary neglect on his part to watch the indicator, and reduce the speed of the engine at the proper time. If he had admitted this at the inquest it is probable the case would have ended there.

It appeared to me that the two signals—a gong and a bell—were unnecessary, and might be misleading, as the bell did not ring in *all* cases when the cage was approaching the surface. This point was considered by the officials of the company, and they decided to remove the bell, and make the gong strike earlier. The headgear at these pits is not suitable for the application of detaching hooks, but in consequence of this accident such hooks are to be adopted at some of the Lilleshall Company's pits, where there are quick winding engines.

Miscellaneous Underground Accidents.

There were 66 accidents under this heading, resulting in 4 deaths, and injuries to 62 persons. The figures for the previous year being 68 accidents, 7 deaths, and 67 persons injured.

The fatalities under this head are much below the average of previous years, and this, I hope, is due, in some measure at least, to the provisions of the revised code of Special Rules in North Staffordshire beginning to be better understood and more strictly enforced.

The miscellaneous underground accidents are sub-divided as follows :—

By explosives.—One fatal and 11 non-fatal accidents. The fatal accident was caused by a miner being burnt by an explosion of compressed gunpowder, while charging a shot-hole at the Kemberton pits of Madeley Wood Colliery, Salop, on the 19th March. He had a candle stuck close to the mouth of the shot-hole, which no doubt ignited the gunpowder while he was charging the hole. He was burnt on the face, arms, and chest, and died on the 31st March.

The non-fatal accidents by explosives were as follows :—

January 15. At Berry Hill Colliery a miner had drilled a shot-hole by hand, and when trying to insert a charge of $\frac{3}{4}$ lb. of gunpowder in a paper cartridge it stuck in the hole. Thomas Roberts, the overman, who was waiting to fire the shot, then tried, contrary to rule, to force the cartridge into the hole by striking it with the rammer, and while he was doing this, the charge exploded, and he was burnt on the face. The hole was badly drilled, and irregular in form, so that the cartridge had become jammed. The rammer was of wood, shod with copper.

January 16. At Podmore Hall, No. 3 pit, a collier was injured by the explosion of a charge of roburite, which had missed fire, while he was drilling a new hole. The new hole was not 6 inches from that containing the charge, as required by rule, and was drilled into it, thus causing the accident. The accident was caused by a breach of rule on the part of the sufferer. The fireman knew he was going to drill another hole, but did not instruct or warn him as he should have done. I think the most satisfactory way of dealing with missed shots would be to require the presence of a fireman or other official during the process of recovering or dealing with the missed charge.

January 17. At Ravenscliffe Colliery a miner was injured by the unexpected explosion of a shot. Two shots were charged with compressed gunpowder and fuze at the face of a stone drift, one was fired, and when the man returned to light the fuze of the other shot, it exploded, its fuze having apparently been lit by the explosion of the first shot. I may repeat here a remark which appears in two previous reports, that the practice of charging two or more shot-holes in close proximity to each other, and firing them by fuzes separately is dangerous and should be prohibited.

February 7. At Park House Colliery a miner was slightly burnt by the ignition of half a bobbin of compressed powder (which by his own previous bungling remained in a shot-hole) while he was getting the stone down with his pick, lighted by a candle. In charging the hole he had only put in half a bobbin of powder, instead of $1\frac{1}{2}$ bobbins, and had partly stemmed the hole before he remembered this. He then placed a bobbin of powder with a second fuze in front of the stemming, and lighted both fuzes together. The half bobbin first inserted was not fired, and he might have suspected this by seeing the stone was not blown down to the end of the hole.

February 21. At Silverdale Colliery, No. 6 pit, a miner was slightly burnt on the back by a blown out shot of ammonite. The accident occurred in a level heading in the Hams Coal. The back of the shot-hole was in a band of friable shale or "hustle" next the roof and above a strong bed of coal 18 inches thick, which it was intended to blow down. The charge consisted of 6 oz. of ammonite, and it was fired by fuze. The shot exploded sooner than was expected, when the collier and fireman were only about 12 yards from it, with nothing intervening. The report was louder than usual, and a thick cloud of dust with a strong blast of hot wind swept along the place. The fireman was not injured, he was clothed, and not in the direct line of the shot. The collier who was naked to the waist, and directly in front of the shot was injured by being struck with debris, and slightly burned on the shoulders. No flame was seen by either of the men. It was found that the shot had not blown down the coal it was intended to get, but had blown out part of the band of soft shale in which the charge was planted, forming a sort of horizontal crater. This accident shows the advantage of using a "safety" explosive, such as ammonite. Had it been gunpowder there would in all probability have been a serious explosion of coal dust with the loss of several lives. The shot was injudiciously placed, and the fireman appeared to have been careless in not allowing more time for retreat, or in wasting the time. The manager promised to adopt electricity for firing safety explosives in future.

May 23. At Hulme Colliery a miner was burnt by gunpowder in some way which could not exactly be ascertained, because he left the pit without informing any one that he was injured, and it was not discovered for two days after, but there is no doubt he was tamperrng with a missed shot in some way. He was prosecuted for breach of Special Rules and fined 10*s*.

June 30. At Adderley Green Colliery a contractor for driving a pair of stone drifts was struck by a piece of rock blown by a shot of compressed gunpowder. He had prepared two shots to be fired with fuze, and was struck by a stone while returning to fire the second shot. There was some doubt as to whether he had not lighted the fuzes of both shots before leaving the face.

July 6. At Wirral Colliery a collier received slight injuries to one hand by the explosion of a charge of 6 oz. of roburite, which he was trying to recover after it had missed fire, and after a second shot had been fired to release it. In this case the fireman was present, and every care appeared to have been taken. The end of the hole containing the original charge was left up, and the collier was attempting to prize the coal down with his pick, when it exploded.

Sept. 6. At Great Fenton Colliery a fireman was burnt about the face and hand by the explosion of a cartridge of compressed gunpowder which he was trying to get to the end of a shot-hole with a wooden rammer. The hole had been drilled for about 2 ft. with a machine drill, until some hard stone or ironstone balls prevented the machine drill from working, and it was deepened about 3 inches by a hand drill. The charge exploded while the fireman was trying to force it to the end of the hole.

Sept. 28. At Leycett Colliery a crutter was slightly injured by the explosion of a small charge of gelignite at the face of a crut or stone drift. The accident was due to the mistake of a fireman, who fired the shot by electricity before the crutter had got away after attaching the wires. The fireman thought another man who came out of the back crut was the man who went to attach the wires to the shot.

Oct. 11. At Madeley Wood Colliery, Salop a collier was struck about the head by coal blown from a small shot of compressed gunpowder. The accident was due to the carlessness of the shot firer in not ascertaining that men working near the shot knew that he was going to light the fuze.

On Inclined and Engine Planes.—One fatal and ten non-fatal accidents. The average number of fatal and non-fatal accidents under this heading during the preceding five years were 5·2 fatal accidents and 20·2 non-fatal accidents, so that the figures for the year 1894 show a large decrease. This may be ascribed, in part at least, to the effect of the revised code of Special Rules in North Staffordshire, and in part, I believe, to greater care in the fitting up of the numerous jig dips in the steep seams of the district. This is a subject on which I have made adverse remarks in previous reports, and although there has been some improvement, there is still room for much more. The rails in these jig dips are often so badly laid that the tubs are constantly getting off the rails, the signal wires and knockers are frequently fitted up in the rudest and most inefficient way, and some of the tubs used are not fit to go down a pit. These and many other matters connected with the underground haulage are worthy of the best attention of the colliery managers, and improvements will be ultimately economical as well as conducive to safety.

The fatal accident under this heading occurred on an engine dip at Talk o'th'Hill Colliery, on the night of the 11th April, and was due to the breakage of a tub draw-bar whereby seven tubs ran back down the dip and killed one of four men who were engaged in widening the dip. As I was clearly of opinion that these men were working with the manager's knowledge in contravention of the Special Rules, proceedings were taken against him, the result of which is given in the list of prosecutions.

The non-fatal accidents on inclined and engine planes appear to be sufficiently described in the List of Accidents.

By Trams and Tubs.—One fatal and 25 non-fatal accidents. The fatal accident occurred on the 16th July at Shelton, No 5, Racecourse Pit, and was entirely due to want of care on the part of the unfortunate youth who was killed. He was attempting to take a tub of ironstone down an incline about 20 yards long, without a locker in the wheels, and going in front of the tub. The weight of the tub overcame him, and he was crushed between it and other tubs at the bottom of the incline.

Many of the non-fatal accidents by tubs were also due to want of caution on the part of the victims. The officials can do much to prevent these accidents by severely checking all risky and irregular practices in connexion with the movement and securing of tubs.

By Machinery Underground.—Two non-fatal accidents, one of them by a young man being struck on the head by the handle of a crab while winding a tub out of a dip place.

Such crabs or winches should be provided with efficient stops to prevent the handles flying back.

Ropes and Chains breaking.—Three non-fatal accidents. Two by the breakage of chains or tackle in jig dips, and one through the breakage of a hauling rope. The latter accident occurred at Park Hall Colliery (Weston Coyney). A hauling rope which had only been in use a week, broke in the shaft, and the broken end got out of the boxes conducting it down the shaft. This caused a journey of tubs in the engine dip to get off the rails, and while a man, named Moore was near them for the purpose of putting them right, the rope was suddenly snatched, and he was dragged some yards by the tubs and thereby injured. The snatching of the rope was caused by the broken end in the shaft being caught by the ascending cage. The hooker at the shaft should not have allowed the cage to be drawn up. The rope appeared to be a bad one, or unsuited for the work, as it subsequently broke twice and had to be removed.

Sundries Underground.—One fatal and 11 non-fatal accidents. None of these accidents call for special remark, beyond the brief description in the List of Accidents.

Accidents on the Surface.

There were six fatal and 29 non-fatal accidents on the surface, the corresponding figures for the previous year being nine fatal, and 30 non-fatal accidents.

By Machinery on the Surface.—One fatal and nine non-fatal accidents. The fatal accident, and two of the non-fatal accidents, were due to the dangerous practice of oiling machinery in motion.

On Railways and Tramways.—Three fatal, seven non-fatal accidents. The majority of these accidents occurred during the movement of trucks by gravity at the screens and in colliery sidings. This work has often to be done where there is too little room for safety. In many cases safety has been too little considered in the construction of the works and ways.

Miscellaneous on Surface.—Two fatal, and 13 non-fatal accidents. These accidents do not appear to call for further remark than is given in the List of Accidents.

Accidents not comprised in the Lists.

The following accidents, which were reported, or came to my knowledge during the year, do not appear to come within the scope of the Mines Act, and are not included as mining accidents in the tables.

On the 1st January, a boy named David Counter, aged 11, not employed, was killed by being run over by tubs drawn by horses while playing on a colliery wharf at Berry Hill.

On the 14th June, a youth named George Roberts got his hand crushed by a surface haulage pulley, at Park Hall Colliery (Weston Coyney), while walking backward with his hand on the rope. He had come to seek work.

On the 22nd June, a boy named James Beeton, aged 15, was injured in the surface stables at Leycett Colliery. He appeared to have been teasing one of the horses with a pikel from the hay-loft, when by some means the pikel was forced through the roof of his mouth, causing injuries from which he died.

On the 4th July, C. Stanyer, a miner, aged 27, died at the bottom of No. 14 pit, Silverdale Colliery, from heart disease. He had hurried to the pit, being late, and when the cage arrived at the bottom, he was unconscious, and died in a few minutes.

On the 14th September, a child named Arthur Hickman, 2½ years old, was killed by being run over by tubs on an endless chain haulage road at Berry Hill Colliery.

On the 23rd October, a labourer, named George Green, died suddenly of heart disease at Silverdale Colliery.

On the 7th December, a potter named Thomas Holmes, aged 16, got his thigh broken while trespassing and riding on tubs on a surface incline at Grange Colliery.

On the 11th December, William Breeze, a labourer, aged 36, died from heart disease soon after coming to his work at Newchapel Colliery.

Complaints from Workmen and Others.

Sixteen complaints or intimations of danger or breach of rules were received during the year, the majority of which were anonymous. They were all inquired into without delay, and steps taken to remedy any dangers or breaches of rules disclosed by the investigation. These communications are, according to instructions, regarded as confidential, no clue being given to their source.

Prosecutions under the Coal Mines Regulation Act.

Tabular Statement.

Name of Mine.	Description of Offender.	Contravention.	Result of Trial.	Penalty.	Costs.
				£ s. d.	£ s. d.
Sneyd	Miner	Special Rule 8	Conviction	—	0 10 0
”	”	”	”	—	0 10 0
”	”	”	”	—	0 10 0
”	”	”	”	—	0 10 0
”	”	”	”	—	0 10 0
”	”	”	”	—	0 10 0
”	”	”	”	—	0 10 0
”	”	”	”	—	0 10 0
”	”	”	”	—	0 10 0
”	”	”	”	—	0 10 0
Norton	Loader	” 119	”	0 5 0	0 9 0
”	Ridder	” 119	”	—	0 9 0
Shelton	Engine man	” 158	”	1 0 0	0 17 6
Norton	Collier	” 81	”	2 0 0	0 13 0
Clough Hall	Fireman	General Rule 4	”	0 10 0	0 10 6
Priors Lee	Runner-on	Special Rule 79	”	2 0 0	0 10 0
Talk o' th' Hill	Manager	” 100	Dismissed	—	—
Shelton	Collier	” 119	Conviction	1 0 0	0 10 6
Hulme	Holer	” 10 & 128	”	0 10 0	0 10 6
Park Hall	Banksman	” 182	”	0 10 0	0 9 0
”	”	” 182	”	0 10 0	0 9 0
Oldfield	Loader	” 8	”	1 0 0	1 2 0
Park Hall	Roadman	” 119	Dismissed	—	—
Whitfield	Taker-off	” 8 & 101	Conviction	2 0 0	0 16 6
Wirral	Drawer	” 151	”	0 10 0	0 8 6
Oldfield	Waggoner	” 12	”	1 0 0	2 6 0
				12 15 0	15 1 0

1. *Prosecutions by the Inspector of Mines.*—On the 21st May, at Newcastle-under-Lyne, before Messrs. J. Bull and S. R. Edge, the certificated manager of Talk o'th' Hill Colliery, was summoned for a breach of Special Rule No. 100. The case arose out of a fatal accident on the 11th April, when a man named Charles Baskeyfield was killed by tubs running down an engine dip owing to the breakage of a tub draw-bar. Baskeyfield and three others were employed to widen the engine dip by blasting the side off. The Special Rule alleged to have been infringed reads as follows: "When any work is "being done on a jig brow, cage dip, self-acting incline, or engine plane, no tubs shall "be run on such roads except for the purposes of the work being done." The men went into the engine dip about 9 p.m. by the manager's direction, and coal was drawn up the dip in the ordinary course of work until 11.30 p.m. The men were engaged in drilling holes in the side of the road, so as to be ready for blasting when coal-drawing ceased. The last journey was going up at the end of the shift when a tub draw-bar broke, and seven tubs ran back down the dip of 1 in 3, and Baskeyfield was killed by one of them. The defence was that the men were not working, but only preparing to work, and that they had been instructed to get into refuge holes while tubs were running in the dip. The magistrates accepted this explanation, and dismissed the case.

2. *Prosecutions by Mine Owners.*—Reported as required by Section 66 of the Act.

16th January, at Burslem.—Ten colliers, for endangering their own lives by being at the bottom of engine dip without permission, to pay costs, 10*s.* each.

13th March, at Burslem.—A loader, for taking matches into the pit. Fined 5*s.* and costs 9*s.*

13th March, at Burslem.—A ridder, for taking a pipe into the pit. To pay costs 9*s.*

19th March, at Hanley.—A winding-engine man, for leaving his engine while men were in the pit. Fined 20*s.* Costs 17*s.* 6*d.*

17th April, at Burslem.—A collier, for interfering with the ventilation by removing a brattice sheet, causing gas to accumulate. Fined 40*s.* Costs 13*s.*

19th April, at Tunstall.—A fireman, for neglecting to report the presence of gas. Fined 10*s.* Costs 10*s.* 6*d.*

4th May, at Shifnal.—A runner-on, for smoking in pit where safety lamps were used. Fined 40*s.* Costs 10*s.*

23rd July, at Hanley.—A collier, for having an unlocked safety lamp in the mine. Fined 20*s.* Costs 10*s.*

8th August, at Longton.—A holer, for tampering with a missed shot and failing to report that he was injured by its explosion. Fined 10*s.* Costs 10*s.* 6*d.*

22nd August, at Longton.—Two banksmen, for not being in attendance to let men down pit. Fined 10*s.* each. Costs 9*s.* each.

4th September, at Longton.—A loader, for getting off cage after the signal had been given to raise the cage. Fined 20*s.* Costs 22*s.*

5th September, at Longton.—A roadman, for having a pipe in his possession in the pit. Acquitted.

20th September, at Tunstall.—Neglecting to fix stop-block on an incline, so that a tub ran down and killed a horse. Fined 40*s.* Costs 16*s.* 6*d.*

30th November, at Neston.—A drawer, for assaulting the under-manager. Fined 10*s.* Costs 8*s.* 6*d.*

10th December, at Longton.—A waggoner, for going down the pit while intoxicated. Fined 20*s.* Costs 2*l.* 6*s.*

NUMBER OF DAYS ON WHICH MINERALS WERE DRAWN AT THE MINES.

The following statements, showing the number of persons employed at mines drawing minerals on different numbers of days (approximately) during the years 1890–94, are abstracted from the "Annual Returns" prepared by the mine owners. In these statements mines which were only equipped for drawing minerals during a portion of the year, or mines where the drawings of minerals was prevented for long periods by accidents or other causes, are excluded. For this reason the calculations for 1894 refer only to mines employing, in Cheshire 97 per cent., in Shropshire 86·19 per cent., and in North Staffordshire 91·71 per cent. of the total number of the workmen employed in and about the mines of those portions of the district. Persons employed on private branch railways, &c., are included.

Cheshire.

Number of Persons employed.	Minerals drawn on more than	Per-centages of Persons.				
		Year 1894.	Year 1893.	Year 1892.	Year 1891.	Year 1890.
1,134	300 days.	40·87	—	1·42	29·69	7·18
11	290 "	0·40	0·30	·20	7·26	43·46
7	280 "	0·25	0·37	7·14	31·76	0·97
0	270 "	—	7·41	24·12	8·05	32·90
206	260 "	7·42	1·39	38·12	—	6·92
102	250 "	3·67	0·67	8·68	7·40	7·18
915	240 "	32·97	3·80	—	8·30	—
287	230 "	10·34	10·95	·90	—	0·62
0	220 "	—	24·46	7·34	6·00	0·57
0	210 "	—	—	—	—	—
30	200 "	1·08	19·00	4·09	—	—
2,692		97·00	68·35	92·01	98·46	99·80
83 less than 200 days.						
2,775 Total No. of Persons employed.						

Shropshire.

Number of Persons employed.	Minerals drawn on more than	Per-centages of Persons.				
		Year 1894.	Year 1893.	Year 1892.	Year 1891.	Year 1890.
136	300 days.	3·60	5·25	11·90	13·14	7·15
452	290 "	11·96	14·50	5·62	13·27	10·20
236	280 "	6·24	6·71	5·09	1·63	25·51
233	270 "	6·17	6·55	13·26	28·86	14·53
179	260 "	4·74	1·05	26·53	10.63	9·63
103	250 "	2·73	0·13	9·37	3·86	1·10
1,181	240 "	31·25	12·28	6·54	11·03	2·59
303	230 "	8·02	30·40	1·94	1·22	14·59
31	220 "	0·82	6·94	2·50	3·33	3·63
254	210 "	6·72	—	3·36	1·14	2·28
149	200 "	3·94	2·77	4·91	2·90	1·52
3,257		86·19	86·58	91·02	91·01	92·73
522 less than 200 days.						
3,779 Total No. of persons employed.						

North Staffordshire.

Number of Persons employed.	Minerals drawn on more than	Per-centages of Persons.				
		Year 1894.	Year 1893.	Year 1892.	Year 1891.	Year 1890.
1,098	300 days	5·68	—	6·48	13·26	19·25
2,161	290 "	11·17	0·27	19·93	34·71	36·43
1,726	280 "	8·92	11·48	23·15	19·26	11·98
2,001	270 "	10·34	19·11	6·96	4·88	9·53
2,212	260 "	11·43	13·52	21·73	13·18	5·98
2,018	250 "	10·43	6·88	6·20	6·41	6·06
2,603	240 "	13·45	14·03	5·53	1·19	0·96
1,973	230 "	10·20	16·69	1·57	·81	0·45
323	220 "	1·67	10·70	0·57	1·17	1·62
1,545	210 "	7·99	1·16	1·86	1·03	0·22
84	200 "	·48	—	0·23	0·15	0·03
17,744		91·71	93·84	94·21	96·05	92·51
1,604 less than 200 days.						
19,348 Total No. of persons employed.						

Plans of Abandoned Mines.

The following record plans of abandoned mines have been forwarded to the Home Office during 1894, for preservation by the Secretary of State as required by section 38 of the Coal Mines Regulation Act. No person except an inspector under the Act is entitled, without the consent of the owner of the mine, to see the plans so deposited until after the expiration of 10 years from the time of the abandonment. A list of all plans of abandoned mines deposited at the Home Office is published separately.

North Staffordshire Collieries.

Bycars Colliery. Little Row Coal.

Cobridge Colliery. Hoo Cannel Marl, Cane Marl, Bassey Mine ironstone. Peacock Marl. Peacock Coal, and Spencroft Coal.

Great Fenton Colliery. Knowles ironstone.

Harriseahead Colliery. Bowling Alley Coal.

Lilydale Colliery (Footrail). Little Row Coal.

Nellydale Colliery. Bullhurst and Winpenny Seams (coal).

Old Hayswood Colliery. Yard Coal.
Park Hall Colliery (Weston Coyney). Hard Mine (coal).
White Barn Colliery, Bassey Mine (coal and ironstone).

Shropshire Collieries.

Madeley Court Colliery, Nos. 9 and 10 pits. Two feet Coal.
Old Park Colliery, Grange pit, Clod, Randle, 2 feet and Little Flint Coals.
" " Park pit. Top Coal.
" " Waggoners Fold pit. Clod Coal.
Wombridge Colliery, Engine pit. Clunch Coal.
" " Round House pit. Two feet Coal.
Windsor Colliery (Clee Hills). Four feet Seam.

BOARD FOR EXAMINATIONS FOR CERTIFICATES.

A vacancy on the Board occurred during the year by the resignation of Mr. W. Y. Craig, Colliery owner. To fill the vacancy thus caused you appointed Mr. F. Rigby, of Alsager, Colliery owner.

The constitution of the Board is as follows :—

Mr. Robert Heath, Greenway Bank, Stoke-on-Trent Mr. F. Rigby, Alsager Mr. H. Warrington, Stoke-on-Trent	Mine owners.
Mr. Noel T. Beach, Lilleshall, Salop Mr. G. C. Greenwell, Poynton, Stockport Mr. J. Strick, Barr Hill, Madeley, Staffs.	Mining engineers.
Mr. H. Martin, St. George's, Wellington, Salop Mr. J. Bennett, Hazelgrove, Stockport Mr. C. Grocott, Silverdale, Staffs.	Working miners.

W. N. Atkinson, H.M. Inspector of Mines for the district.
Secretary to the Board, Mr. Jos. Knight, Newcastle, Staffs.

The examiners appointed by the Board for conducting the examination were Messrs. G. C. Greenwell, J. Strick, and Ed. Jones.

The annual examination was held at Newcastle-under-Lyne on the 26th and 27th June. Twenty-five candidates presented themselves, of whom 13 were candidates for first-class certificates and 12 for second-class certificates. Four of the candidates for first-class certificates and 7 for second-class certificates were successful. Official lists of all persons holding certificates as managers and under-managers of mines are published.

EXEMPTIONS.

The following exemptions from certain of the provisions of the Coal Mines Regulation Act were granted during the year :—

1. *Granted by the Secretary of State.*—Exemption from provisions prohibiting single shafts while a shaft is being sunk, or an outlet being made, section 18 (iii.) (*a*). Granted to the Highley Mining Company, Limited, for Kinlet Colliery. Expires 10th October 1895.

Exemption from provisions prohibiting single shafts while a shaft is being sunk, or an outlet being made, section 18 (iii.) (*a*). Granted to the Broseley Tileries Company, Limited, for their Dunge pit. Expires 31st August 1895.

Exemption from provisions prohibiting single shafts on account of insufficiency of mineral proved, section 18 (ii.) (*a*). Granted to Mr. C. R. Jones, for Fish House Colliery. Expires 31st December 1895.

2. *Granted by the Inspector of Mines.*—Exemptions from provisions requiring guides in the shafts (section 49, General Rule 25) were granted to Mr. C. R. Jones, for Fish House Colliery. Expiring 31st December 1895.

To the Broseley Tileries Company, Limited, for their Deep pit. Expiring 31st August 1895.

To Messrs. Maw & Co., Ltd., for their Tuckies pit. Expiring 31st December 1895.

Ambulance Classes for Miners.

In July last you addressed a letter to the Inspectors of Mines requesting them to promote the formation of ambulance classes for miners, in compliance with which I addressed a circular on the subject to the colliery owners in my district, and received a number of replies expressing approval of the object in view, and a desire to promote it.

I also brought the matter before the council of the North Staffordshire Mining Institute, with the result that a number of ambulance classes for miners were formed towards the end of the year. In Shropshire, I understand, the county council have promoted ambulance classes, and it is hoped that in future some assistance may be obtained from the Staffordshire County Council.

Miners' Permanent Relief Fund.

The North Staffordshire Miners' Permanent Relief Fund continues to give evidence of the great benefit it is to the miners who are provident enough to become members. The whole of the victims of the recent inundation at Audley Colliery, 77 in number, were members of the fund, so that their dependent relatives will receive the support thus insured for them by the forethought of their kinsmen in addition to such relief as may be provided by the compassionate subscriptions of the public. This fund does not receive the amount of support from some of the miners and mine owners in the district to which, in my opinion, it is eminently worthy. Its benefits are received by the relatives of scores of miners killed by accidents, of which the general public hear nothing, and by hundreds of miners temporarily disabled by accidents, and if such benefits are not so great as might be wished, that is largely due to the small membership and the lack of outside support. Under existing conditions it should be evident to those who consider the question in all its bearings, that Miners' Permanent Relief Funds, supported by the miners themselves, offer the best solution to the relief of distress caused by mining accidents.

The general secretary informs me that on 31st December 1894 the number of members of the North Staffordshire Fund was 5,436, being a decrease of 1,353 from the previous year. This decrease in the membership was entirely due to the fact that fewer men were employed at the collieries where the fund is established, and to the closing of one pit where between 400 and 500 members were employed. During the year members' contributions amounted to 4,380*l.* 6*s.* 10½*d.*, and colliery owners' contributions to 307*l.* 5*s.* 1*d.* Payments on account of non-fatal accidents were 1,370*l.* 7*s.*; widows and children 1,391*l.* 11*s.*; funeral allowances, 60*l.* There were on the fund at the end of the year 66 widows, 152 children, and 1 guardian of orphans. Nine members were killed during the year, leaving 7 widows and 22 children (included in above).

The Coal Dust Question.

The Report of the Royal Commission on Explosions from Coal Dust in Mines, issued in July 1894, has advanced this question to a position where further legislation is required in order to carry out some of the recommendations contained in that Report.

While not agreeing with all the conclusions and proposals set forth in the Report, I think it offers a sufficient basis for legislation, and it is undoubtedly an important and authoritative pronouncement on the coal dust question, which should be carefully studied by all persons concerned in the management of dusty coal mines.

Very little has yet been done to remove or mitigate the cause of the danger from coal dust. The purpose of the precautions hitherto taken has been to prevent its ignition, rather than to render widespreading explosions of coal dust impossible, and this is the object to which the attention of mining engineers should now be specially directed.

Official Duties.

During the year 1894 I was from home on official business on 283 days and 31 nights, and travelled a distance of about 9,500 miles. I visited 248 collieries and mines, being underground on 98 occasions, for the purpose of investigating accidents and complaints, and as often as possible without any definite object except to see that the Mines Acts and Special Rules were complied with. I attended 17 inquests, including adjournments. Eighteen days were occupied at the Home Office and two by legal proceedings. I attended one meeting of the Board for examinations, and was present on part of two days at the annual examination for certificates. About 15 days were entirely occupied with correspondence and other office work at home, the bulk of this work being done on days partially devoted to inspections. I had eight days' leave of absence during the year.

Mr. H. R. Makepeace continues to assist me ably and willingly in the general work of the district. He informs me that during the year 1894 he was officially engaged on 283 days, eight of which were occupied by office work at home. He travelled 8,464 miles on official business, made 170 underground inspections, and 82 surface inspections, attended 13 inquests, and was engaged on four days at police courts and assizes. He had 24 days' leave of absence during the year.

NEW LEGISLATION.

The Quarries Act, 1894, comes into force on the 1st January 1895. This Act applies "to every place (not being a mine) in which persons work in getting slate, stone, "coprolites, or other minerals, and any part of which is more than 20 feet deep," and provides that certain of the provisions of the Metalliferous Mines Acts shall apply to such quarries "in like manner as they apply in the case of a mine," and that inspectors under the Metalliferous Mines Acts shall be inspectors of quarries.

The Quarries Act also provides that certain provisions of the Factory and Workshop Acts which apply to quarries shall be administered by the inspectors of mines, and in order to avoid a double system of inspection the inspectors of mines have been appointed inspectors under the Factory and Workshop Acts for works for preparing and manufacturing the quarried material for sale which belong to the quarry owner, and are situated at a distance not exceeding one mile from the quarry.

In anticipation of the Quarries Act coming into force a list of quarries in each county has been furnished by the chief constables, and a code of proposed Special Rules under the Act sent to the owners of quarries coming under the Act. This list will doubtless require revision to make it accurate, but it shows 404 quarries coming under the Act in this district, and there may be nearly 100 attached works under the Factory and Workshop Act.

The Coal Mines (Checkweigher) Act, 1894 (25th August 1894), is "An Act to "amend the provisions of the Coal Mines Regulation Act, 1887, with respect to check- "weighers," and provides a penalty for certain interferences with the appointment and office of checkweighers.

PART II.—MINES UNDER THE METALLIFEROUS MINES REGULATION ACTS.

PERSONS EMPLOYED AND MINERALS RAISED.

TABLE showing the PERSONS EMPLOYED and MINERALS RAISED at Mines under the Metalliferous Mines Regulation Act, in the North Stafford Inspection District during the year 1894.

Counties.	Number of Persons employed			Tons of Minerals wrought.						
	Under-ground.	Above-ground.	Total.	Barytes.	Gypsum.	Lead Ore.	Lime-stone and Calc spar.	Salt (Rock).	Zinc Ore.	Total.
Cheshire - - -	171	38	209	—	—	—	5,002	138,277	—	143,279
Shropshire - - -	201	101	302	4,777	—	2,057	3,171	—	302	10,307
Staffordshire, North - -	60	50	110	—	28,848	—	—	—	—	28,848
TOTALS 1894 - -	432	189	621	4,777	28,848	2,057	8,173	138,277	302	182,434
TOTALS LAST YEAR 1893	498	196	694	5,852	24,564	1,800	7,882	150,877	398	191,373

Details as to the sex and ages of the persons employed will be found in Table No. 3 of the summaries.

There is a decrease, since the previous year, of 73 in the number of persons employed at the metalliferous mines, due to the further decline of lead and zinc mining in Shropshire.

Accidents.

No accidents were reported from the metalliferous mines of the district during the year 1894.

I am, &c.
(Signed) W. N. ATKINSON.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Office, Whitehall.

COAL MINES REGULATION ACT.

LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom within one Year and a Day from the Date of the Accident, and of the NON-FATAL ACCIDENTS causing serious personal injury or arising from Explosions of Gas, or of any Explosive, or of any Steam Boiler in the District, during the Year 1894.

Date and Hour of the Accident.		Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.		No. of Persons killed.	No. of Persons injured.
			Explosions of Firedamp or Coal Dust. 1 Accident; 1 Killed; 12 Injured.									
1894. Oct. 16	p.m. 5.30	3rd	Harecastle and Woodshutts Colliery, Moss Pits.	Harecastle, Staffs.	Bidder and Elliot	Geo. Hulse	41	Fireman	Slight burns on face and head			
"	"	"	" "	" "	" "	Saml. Bird	29	Roadman	Bruised head			
"	"	"	" "	" "	" "	Jas. Shaw	38	Hooker	Effects of after-damp			
"	"	"	" "	" "	" "	Thos. Brooks	24	Loader	" "			
"	9.30	"	" "	" "	" "	**Wm. Elliman**	28	Fireman	Skull fractured			
"	"	2nd	" "	" "	" "	Saml. Lowndes	56	Dataler	Both legs broken	Explosions of fire-damp caused by a gob fire (*see* Report, p. 5).	1	12
"	"	3rd	" "	" "	" "	J. Bellfield, sen.	66	Under manager	Left eye bruised			
"	"	2nd	" "	" "	" "	Hugh Turnock	39	Fireman	Arm injured			
"	"	1st	" "	" "	" "	Geo. Wheats	27	Collier	Burns on face and chest			
"	"	"	" "	" "	" "	Alf. Cartwright	39	"	Burns on face and injury to thigh			
"	"	"	" "	" "	" "	Jos. Hough	39	"	Lacerated wound on head			
"	"	"	" "	" "	" "	Thos. Dudley	42	"	Face burnt			
"	"	"	" "	" "	" "	Geo. Wise	43	Datáler	Ears and arm burnt			

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
									Falls of Roof and Side. 95 Accidents; 14 Killed; 87 Injured.		
1894. Jan. 3	a.m. 9.30	4th	Harrison and Woodburn.	Leycett, Staffs.	Madeley Coal and Iron Co., Ltd.	**Geo. Pointon**	48	Collier	Fall of holing dirt from side above coal at working face in 4-ft. seam. Died 7th January.	1	–
„ 3	„	1st	Podmore Hall, Minnie pit.	Halmerend, Staffs.	Midland Coal, Coke, and Iron Co., Ltd.	Eph. Deane	34	Collier	Head and hand cut by fall of stone at a fault while cleaning an old level in the Bullhurst Seam.	–	1
„ 4	p.m. 2.30	„	Leycett, Fair Lady pit.	Leycett, Staffs.	Madeley Coal and Iron Co., Ltd.	Thos. Morrey	37	Chargeman of datalers.	Fall of roof on main level in 7-ft. Banbury Seam while repairing.	–	1
„ 4	8.30	6th	Talk-o'-th'-Hill	Talk-o'-th-Hill, Staffs.	Talk-o'-th'-Hill, Colliery, Ltd.	**Jas. Bowker**	28	Collier	Fall of coal from side at working face in 8 ft. Banbury Seam. Coal should have been spragged. Died 14th February.	1	–
„ 5	5.15	3rd	Ubberley	Bucknall, Staffs.	Chatterley - Whitfield Collieries, Ltd.	**Thos. Kelly**	29	Dataler	Fall of roof in engine dip during repairs	1	–
„ 8	Noon	6th	Mossfield	Longton, Staffs.	W. Rigby & Co.	Thos. Rogers	34	Collier	Fall of roof between two posts at working face in hard mine. Leg broken.	–	1
„ 15	a.m. 7.0	1st	Donnington, Granville pit.	Donnington, Salop	Lilleshall Co., Ltd.	Jas. Flick	45	Getter	Fall of coal while drawing a sprag at working face in Randle coal. Two ribs broken, and leg slightly injured.	–	1
„ 15	p.m. 5.45	„	Whitfield	Tunstall, Staffs.	Chatterley - Whitfield Collieries, Ltd.	Jas. Brown	45	Collier	Fall of coal while holing in Cockshead Seam. Leg broken	–	1
„ 18	a.m. 10.30	5th	Grange	Burslem, Staffs.	R. Heath & Sons	Hy. Thomas Lewis Porter	30 30	Bricklayer „	Leg broken. Back injured. } Fall of roof in crut where they were building an arch.	–	2
„ 18	Noon	6th	Priors Lee, Stafford, No. 4 pit.	Priors Lee, Salop	Lilleshall Co., Ltd.	Simeon Breeze	20	Driver	Blow on ankle by fall of roof on road while driving in clod coal.	–	1
„ 22	a.m. 9.0	3rd	Hanley, Northwood pit.	Hanley, Staffs.	Hanley Colliery Co., Ltd.	Geo. Hewitt	37	Collier	Fall of roof at working face in Banbury Seam. Leg bruised	–	1
„ 25	9.0	3rd	Norton	Burslem, Staffs.	R. Heath & Sons	Jno. Garbett	32	„	Fall of roof at long wall face in Hard Mine. Back crushed	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Jan. 25	p.m. 1.30	7th	Ubberley - -	Bucknall, Staffs. -	Chatterley - Whitfield Collieries, Ltd.	Jno. Bradbury - -	28	Loader -	Fall of roof at working face in Banbury Seam. Foot crushed -	–	1
„ 26	a.m. 12.30	2nd	Glebe - -	Fenton, Staffs. -	J. Challinor & Co., Ltd.	Jno. Tipton - -	50	Timberer -	Fall of roof at working face in Moss Seam. Injury to hip and ankle.	–	1
„ 29	p.m. 9.0	6th	Dukinfield, Astley pit	Dukinfield, Cheshire.	Dukinfield Coal and Cannel Co., Ltd.	Elijah Stelfox - -	27	Collier - -	Fall of roof at working face in Cannel Mine. Leg broken -	–	1
„ 30	1.0	7th	Priors Lee, Stafford pits.	Priors Lee, Salop -	Lilleshall Co., Ltd. -	Alf. Lewis - -	32	Getter -	Fall of roof at working face. Leg broken - - -	–	1
Feb. 16	4.15	1st	Shelton, Deep pit -	Hanley, Staffs. -	Shelton Iron, Steel, and Coal Co., Ltd.	Wm. Bloor - -	27	Loader -	Fall of roof on road. Roof not properly secured. Leg broken	–	1
„ 16	10.0	2nd	Highley - -	Highley, Salop -	Highley Mining Co., Ltd.	Jno. Owen - -	29	Collier -	He knocked a post out while getting coal down causing a fall of roof. Leg broken.	–	1
„ 20	a.m. 11.30	6th	Priors Lee, Wood-house pit.	Priors Lee, Salop -	Lilleshall Co., Ltd. -	Wm. Haughton -	35	„ - -	Coal which he was getting down fell on to him at working face in Clod Coal. Broken arm and broken ribs.	–	1
„ 21	p.m. 10.45	2nd	Talk-o'-th'-Hill -	Talk-o'-th-Hill, Staffs.	Talk-o'-th'-Hill Colliery, Ltd.	**Wm. Casewell** -	28	Dataler -	Fall of roof at working face of a road being driven through gob in 8 feet Banbury Seam.	1	–
„ 23	a.m. 8.30	3rd	Great Fenton, Bourne pit.	Fenton, Staffs. -	Stafford Coal and Iron Co., Ltd.	R. Lester - -	26	Loader -	Fall of ironstone at working face in Bassey Mine. Leg cut -	–	1
„ 26	p.m. 1.30	8th	Whitfield - -	Tunstall, Staffs. -	Chatterley - Whitfield Collieries, Ltd.	Geo. Parkinson - -	40	Collier -	Fall of top coal and roof while drawing timber in waste in Cockshead Seam. Collar bone broken.	–	1
„ 27	3.15	1st	Mossfield - -	Longton - -	W. Rigby & Co. -	Jno. Williams - -	46	„ - -	Fall of roof at working face in Cockshead Seam. Leg broken	–	1
Mar. 1	2.30	8th	Foxfield - -	Cheadle, Staffs. -	Foxfield Colliery Co., Ltd.	Jno. Tonge - -	35	Getter -	Injured by coal falling over sprags at working face in Wood-head Seam.	–	1
„ 2	3.30	9th	High Carr - -	Newcastle, Staffs. -	Reps. of late J. H. Williamson.	Thos. Hancock -	46	Miner - -	Fall of ironstone from working face in Red Mine after he had drawn sprags for shot firing. Leg broken.	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Mar. 9	noon	6th	Shelton, Rowhurst pits.	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	**Wm. Greenhalgh** **Ed. Greenhalgh** Jos. Dye	46 21 24	Crutter " "	The two Greenhalghs were killed, and Dye injured internally, by a large fall of roof in a place they were preparing for making stables.	2	1
" 19	p.m. 9.0	7th	Lingard Lane	Bredbury, Cheshire	J. and R. Stott-Milne	C. W. Owen	23	Loader	Fall of coal at fault at working face. Leg broken	–	1
" 20	2.0	8th	Apedale, Burley pit	Newcastle, Staffs.	Midland Coal, Coke, and Iron Co., Ltd.	Ch. Burgess	38	Collier	Fall of top coal, from under which he was knocking a post at working face in 10 feet Seam. Hip bruised.	–	1
" 28	9.30	7th	Ubberley	Bucknall, Staffs.	Chatterley - Whitfield Collieries, Ltd.	Thos. Probyn	30	Timberer	Fall from side of level in Hard Mine while repairing. Knee crushed.	–	1
April 11	a.m. 10.30	4th	Adderley Green	Longton, Staffs.	Stirrup and Pye	Geo. Bailey	25	Buttocker	Fall of coal from working face in Banbury Seam. Legs crushed.	–	1
" 11	p.m. 2.45	9th	Shelton, Deep pit	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	Thos. Ellis	36	Collier	Fall of roof at working face in Holly Lane Seam. Thigh broken.	–	1
" 13	8.0	1st	Audley	Audley, Staffs.	W. Rigby & Co.	**Walter Proctor**	22	Loader	Fall of roof at working face from a slip, in a level heading in 8-ft Banbury Seam.	1	–
" 17	12.30	7th	Donnington, Grange pit.	Donnington, Salop	Lilleshall Co., Ltd.	Moses Hick	35	Filler	Fall of coal from working face in double coal by a "bump." Leg broken.	–	1
" 17	11.0	4th	Audley	Audley, Staffs.	W. Rigby & Co.	C. W. Fletcher	13	Waggoner	Fall of roof from slips on main level in 10-ft, seam. Head cut and thigh crushed.	–	1
" 18	a.m. 9.0	3rd	Poynton and Worth, Park Oval pit.	Poynton, Cheshire	Lord Vernon	**John Bowden**	49	Collier	Fall of roof on waggoning road in Accommodation Seam, 20 yards from face.	1	–
" 24	8.0	2nd	Dukinfield, Astley pit	Dukinfield, Cheshire	Dukinfield Coal and Cannel Co., Ltd.	**Wm. Mellin** Geo. Stewart	47 21	Fireman Collier	Fall of roof in a jig brow in Black Mine while pulling loose stone down. Mellin died on 27th April.	1	1
" 30	9.15	4th	Talk-o'-th'-Hill	Talk-o'-th'-Hill, Staffs.	Talk-o'-th'-Hill Collieries, Ltd.	Thos. Hopwood	32	"	Fall of coal from slip, at face, of a narrow place in Bullhurst Seam. It should have been spragged. Thighs crushed.	–	1
May 1	10.30	5th	Donnington, Barracks pit.	Donnington, Salop	Lilleshall Co., Ltd.	Jno. Tong	36	Filler	Fall of stone in gateway near working face in Double Coal. Shoulder and hip injured.	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. May 2	p.m. 2.0	8th	Shelton, No. 3 Racecourse pit.	Hanley, Staffs.	Shelton Iron, Steel and Coal Co., Ltd.	Martin Lovekin Fred Evans	38 24	Fireman Collier	Fall of ironstone at working face in Bassey Mine, after drawing spraggs for shot firing. Lovekin's leg and foot bruised. Evans, one leg broken and the other crushed.	–	2
" 3	a.m. 8.30	3rd	Mossfield	Longton, Staffs.	W. Rigby & Co.	Thos. Johnston	30	Loader	Wrist fractured by fall of roof at working face in Banbury Seam.	–	1
" 4	10.0	4th	Longton Hall	" "	Longton Hall Co., Ltd.	Ch. Derry	54	Collier	Fall of top coal while barring it down in waste in Great Row Seam. Leg broken.	–	1
" 7	p.m. 2.0	8th	Biddulph Valley, Havelock pit.	Tunstall, Staffs.	R. Heath & Sons	Isaac Wardless	41	"	Leg broken and injury to breast by fall of roof at working face in Hard Mine.	–	1
" 7	4.0	2nd	Clough Hall, No. 18 pit.	Kidsgrove, Staffs.	Birchenwood Colliery Co., Ltd.	Saml. Bailey	30	"	Fall of coal from working face in Bullhurst Seam. ∠ 35°. Thigh broken.	–	1
" 8	12.15	6th	Great Fenton, Sutherland pit.	Fenton, Staffs.	Stafford Coal and Iron Co., Ltd.	Jno. Doran	56	"	Head cut by a piece of ironstone falling from the working face in Little Mine.	–	1
" 8	4.0	11th	Biddulph Valley, Havelock pit.	Tunstall, Staffs.	R. Heath & Sons	Ed. Haywood	42	Dataler	Fall of roof at bottom of dip in Hard Mine while repairing. Thigh broken.	–	1
" 17	a.m. 8.30	3rd	Poynton and Worth, Laurence pit.	Poynton, Cheshire	Lord Vernon	I. Daniel	39	Collier	Fall of coal while holing in Accommodation Seam. Collarbone broken.	–	1
" 22	Noon	6th	Great Fenton, Sutherland pit.	Fenton, Staffs.	Stafford Coal and Iron Co., Ltd.	Thos. Brandon	21	Dataler	Back injured by fall of roof while stowing gob in Ash Seam	–	1
" 22	p.m. 11.0	3rd	Audley	Audley, Staffs.	W. Rigby & Co.	Ch. Martin	55	Collier	Fall of roof at slip at working place in heading in 7-ft. Banbury Seam. Leg broken.	–	1
" 23	a.m. 9.30	4th	Ubberley Hall	Longton, Staffs.	Central Collieries, Ltd.	**Geo. Shenton**	33	"	Fall of roof coal in waste while building pack at working face in Cockshead Seam.	1	–
" 23	10.0	"	Wombridge, Rose and Crown pits.	Wellington, Salop	Hopley Bros.	Rd. Dobbs	54	Holer	Side bruised by fall of clod while holing	–	1
" 29	7.0	1st	Harrison and Woodburn.	Leycett, Staffs.	Madeley Coal and Iron Co., Ltd.	**Danl. Webb**	37	Collier	Fall from side of level while repairing it, in Hams and Rough 7-ft. Seam.	1	–

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. May 29	p.m. 7.0	4th	Shelton, No. 3 Race-course pit.	Hanley, Staffs.	Shelton Iron, Steel and Coal Co., Ltd.	Jos. Horton	55	Timberman	Body crushed by fall of roof while repairing in Main Crut	–	1
June 1	a.m. 7.0	1st	Hanley, Northwood pit.	Hanley, Staffs.	Hanley Colliery Co., Ltd.	Geo. Brindley	27	Loader	Cut on leg by loading box, caused by fall of roof at working face in Banbury Seam.	–	1
" 2	p.m. 1.0	7th	Donnington, Overton's pit.	Donnington, Salop	Lilleshall Co., Ltd.	**Emanuel Turner**	48	Holer	Fall of roof at working face in Flint Coal. Died next day	1	–
" 6	a.m. 11.0	5th	High Carr	Newcastle, Staffs.	Reps. of late J. H. Williamson.	Ed. Agar	32	Miner	Fall of ironstone from working face in Red Mine. Broken arm.	–	1
" 7	p.m. 4.30	2nd	Great Fenton, Pender pit.	Fenton, Staffs.	Stafford Coal and Iron Co., Ltd.	Thos. Galley	64	Dataler	Fall of roof in jig dip in Great Row Seam, while repairing Head and leg injured.	–	1
" 8	a.m. 6.15	1st	Priors Lee, Stafford No. 1 pit.	Prior's Lee, Salop	Lilleshall Co. Ltd.	Wm. Purcell	56	Holer	Foot injured by fall of roof at working face in Double Coal	–	1
" 19	7.30	2nd	Great Fenton, Bourne pit.	Fenton, Staffs.	Stafford Coal and Iron Co., Ltd.	Thos. Steel	37	–	Head cut by fall of roof while drawing a post in Bassey Mine	–	1
" 19	p.m. 9.0	6th	Hanley, Northwood pit.	Hanley, Staffs.	Hanley Colliery Co., Ltd.	Geo. Tunnicliffe	37	Collier	Fall of coal from working face while taking sprag out in Holly Lane Seam. Leg broken.	–	1
" 20	8.0	5th	Clough Hall, No. 18 pit.	Kidsgrove, Staffs.	Birchenwood Colliery Co., Ltd.	Paul Barlow	60	"	Injury to hip by fall of coal which knocked a sprag out at working face in Bullhurst Seam.	–	1
" 29	noon	6th	Newchapel	Tunstall, Staffs.	R. Heath & Sons	Jno. Mollart	52	"	Injury to spine and broken thigh by fall of stone between two slips at working face in Rowhurst Seam.	–	1
July 20	p.m. 12.15	7th	Donnington, Barn pit.	Donnington, Salop	Lilleshall Co., Ltd.	**Daniel Walters**	64	Repairer	Broken thigh and injury to back by fall of roof and side on road near face in Deep Coal. The place should have been timbered. Died 24th September.	1	–
" 25	a.m. 8.0	5th	Dukinfield, Dewsnap pit.	Dukinfield, Cheshire	Dukinfield Coal and Cannel Co., Ltd.	Samuel Bottoms	43	Collier	Fall of coal while cutting sprag out in Roger Mine. Leg broken.	–	1
" 26	4.30	6th	Talk-o'-th'-Hill	Talk-o'-th'-Hill, Staffs.	Talk-o'-th'-Hill Colliery, Ltd.	Mich. Rutledge	50	"	While pulling coal in a steep drift he slipped, and the coal and he rolled down. Broken arm and cuts.	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Aug. 2	a.m. 9.0	3rd	Harecastle, Moss pits.	Harecastle, Staffs.	Bidder & Elliot	Saml. Sprosson	30	Collier	Fall of top coal from corner of pillar he was preparing to remove in Bullhurst Seam. Thigh broken.	–	1
„ 3	7.30	1st	Prior's Lee, Stafford pits.	Prior's Lee, Salop	Lilleshall Co., Ltd.	Enoch Davis	46	Stallman	Fall of bass while drawing a bar in Flint Seam. Shoulders and back bruised.	–	1
„ 27	11.0	5th	Shelton, No. 3, Racecourse pit.	Hanley, Staffs.	Shelton Iron Steel and Coal Co., Ltd.	Geo. Finney	49	Collier	Back injured by post knocked out while pulling down a piece of coal from roof in Great Row Seam.	–	1
„ 29	p.m. 3.30	9th	Sneyd	Burslem, Staffs.	Sneyd Colliery and Brickworks Co., Ltd.	Geo. Bosson	22	Loader	Hand crushed by fall of roof at working face in 10-ft. Seam	–	1
Sept. 5	7.0	4th	Clough Hall, No. 4 pit.	Kidsgrove, Staffs.	Birchenwood Colliery Co., Ltd.	D. Jukes	22	Collier	Fall of coal from side at working face in 8-ft. Seam. It should have been spragged. Broken leg and collar bone.	–	1
„ 6	a.m. 10.0	3rd	Dukinfield, Astley pit.	Dukinfield, Cheshire	Dukinfield Coal and Cannel Co., Ltd.	Robt. Shirt	27	„	Head and shoulders injured by fall of roof while getting it down, at working face in Cannel Mine.	–	1
„ 13	p.m. 4.0	8th	Clanway	Tunstall	Clive, Son, & Myott, Ltd.	Wm. Roberts	13	Windroad boy	Fall of coal from deep side of level in Peacock Seam while going out from his work.	–	1
„ 15	a.m. 8.30	3rd	Priors Lee, Woodhouse pit.	Prior's Lee, Salop	Lilleshall Co., Ltd.	Geo. Nock	35	Filler	Fall of roof at working face in New Mine. Back injured and head cut.	–	1
„ 22	3.30	10th	Norton	Burslem	R. Heath & Sons	Hy. Eaton	50	Collier	Fall of roof at slip while preparing to set a bar at working face in Hard Mine. Arm broken.	–	1
Oct. 3	9.0	3rd	Donnington, Grange pit.	Donnington, Salop	Lilleshall Co., Ltd.	Jas. Stanworth	65	Holer	Fall of dirt while holing at Longwall face in Double Coal. Shoulder blade injured.	–	1
„ 8	10.0	3rd	Park Hall (Weston Coyney).	Longton, Staffs.	Park Hall Colliery Co., Ltd.	Hy. Cooke	22	Assistant Jigger	Fall of roof in jig dip in Holly Lane Seam. Thumb crushed	–	1
„ 16	10.30	5th	Silverdale, No. 6 pit	Newcastle, Staffs.	Butterley Co., Ltd.	**Wm. Reynolds**	34	Collier	Fall of roof coal at working face in Rough 7-ft Seam L 45°	1	–
„ 20	10.0	4th	Old Park, Pudley Hill pit.	Dawley, Salop	Stirchley Coal and Iron Co.	Enoch Watkiss	55	„	Hand injured by fall of bass from roof at working face in Clod Coal.	–	1
„ 24	p.m. 12.30	6th	Great Fenton Sutherland pit.	Fenton, Staffs.	Stafford Coal and Iron Co., Ltd.	Enoch Bough	56	„	Fall of roof at working face in Ash Seam while drawing a post. Shoulder and back injured.	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Oct. 26	p.m. 6.15	12th	Apedale, Burley pit	Newcastle, Staffs. -	Midland Coal, Coke, and Iron Co., Ltd.	Wm. Dutton - -	39	Collier -	Fall of roof while drawing timber in 8-ft. Banbury Seam. Leg broken. Too much timber had been left to draw at once, and low side pillar worked too far back.	–	1
Nov. 1	a.m. 7.0	1st	Glebe - -	Fenton, Staffs. -	J. Challinor & Co., Ltd.	Wm. Hammonds -	27	„ - -	Fall of roof at working face in Yard Coal. Ankle dislocated and bruised.	–	1
„ 2	p.m. 1.0	7th	„ - -	„ „ -	„ „ „	Jno. Rowlands -	53	Underlooker -	Fall of roof while examining roof of a crut. Left hand and foot hurt.	–	1
„ 6	a.m. 11.0	6th	Great Fenton Sutherland pit.	„ „ -	Stafford Coal and Iron Co., Ltd.	Martin Regan - -	40	Collier -	Fall of coal from face while holing in Ash Seam. Leg broken	–	1
„ 9	p.m. 2.0	8th	Oldfield - -	Longton, Staffs. -	Oldfield Colliery Co., Ltd.	John Byatt - -	40	Contractor -	Fall of top coal while he was drawing a post at working face in Yard Coal. Leg broken.	–	1
„ 16	3.0	8th	Park Hall (Weston Coyney).	„ „ -	Park Hall Colliery Co., Ltd.	Jesse Dennis - -	48	Collier -	Fall of roof in working face in Holly Lane Seam. Leg broken	–	1
„ 16	a.m. 6.30	1st	Wombridge - -	Wellington, Salop	Hopley Brothers -	Wm. Jones - -	20	Loader -	Fall of roof at working face in Clod Coal. Back bruised -	–	1
„ 23	p.m. 12.30	7th	Priors Lee, Stafford No. 2 pit.	Priors Lee, Salop -	Lilleshall Co., Ltd. -	Jno. Lowe - -	50	Getter -	Fall of coal at working face in Flint Coal. Side bruised -	–	1
„ 27	Noon	7th	Madeley Court, No. 7 pit.	Madeley, Salop -	Madeley Court Co. -	G. G. Dawley - -	55	Fireman -	Fall of roof while examining after a shot at working face in Best Coal. Dawley was cut on head and face and bruised on back. Oliver's arm was broken.	–	2
		6th	„ „ -	„ „ -	„ „ -	Richd. Oliver - -	49	Getter -			
Dec. 4	a.m. 7.15	2nd	Brown Hills -	Tunstall, Staffs. -	R. Heath & Sons -	Chas. Beswick -	33	Loader -	Fall of roof caused by jig post coming out while he was jigging in Half Yards Seam. Leg broken.	–	1
„ 5	10.0	4th	Silverdale, No. 6 pit -	Newcastle, Staffs. -	Butterley Co., Ltd. -	Wm. Bowers - -	54	Collier -	Fall of Coal from side at working place in Hams and Rough 7-ft. Seam. Leg broken.	–	1
„ 5	p.m. 2.0	8th	Old Park, Spout pit	Dawley, Salop -	Stirchley Coal and Iron Co., Ltd.	Thos. Pitchford -	22	Loader -	Head cut by fall of coal at working face in Double Coal -	–	1
„ 10	a.m. 8.0	2nd	Shelton, No. 8 Racecourse pit.	Hanley, Staffs. -	Shelton Iron, Steel, and Coal Co., Ltd.	Jno. Ellis - - -	50	Collier -	Fall of stone from working face in Pennystone Seam. Leg broken and back bruised.	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Dec. 12	a.m. 3.30	6th	Dukinfield, Astley pit.	Dukinfield, Cheshire	Dukinfield Coal and Cannel Co., Ltd.	Jno. Parry - -	26	Dataler -	Fall of roof while repairing road in Black Mine. Back injured	–	1
„ 15	9.30	4th	Highley - -	Highley, Salop -	Highley Mining Co., Ltd.	Ed. Tompkin - -	40	Collier -	Fall of coal from slip while holing, sprag knocked out. Thigh broken.	–	1
„ 17	p.m. 4.30	2nd	Apedale, Watermills pit.	Newcastle, Staffs. -	Midland Coal, Coke, and Iron Co., Ltd.	Geo. Williams -	45	Dataler -	Fall of roof while sawing out a bar on level in 8-ft. Banbury Seam. Hand cut and bruised arm and hips.	–	1
„ 28	a.m. 7.30	2nd	Wombridge - -	Wellington, Salop -	Hopley Brothers -	Noah Jones - -	55	„ -	Hand injured by fall of a lump of coal - - - -	–	1

In Shafts. 9 Accidents: 2 Killed; 10 Injured.

					Over winding.						
Sept. 18	p.m. 3.30	1st	Donnington, Barracks pit.	Donnington, Salop	Lilleshall Co., Ltd. -	**Jas. Williams** -	62	Sinker -	Neck broken and other injuries (Thrown out of cage owing to it being overwound)	1	3
		9th	„ „ -	„ „ -	„ „ -	Ch. Sylvester - -	38	Under-manager	Back injured		
		11th	„ „ -	„ „ -	„ „ -	John Howals - -	28	Engineman -	Broken wrist		
		10th	„ „ -	„ „ -	„ „ -	Wm. Pitchford -	30	Blacksmith -	Lower part of body injured		
					Ropes and chains breaking, none.						
					Whilst Ascending or Descending by Machinery.						
Apr. 6	p.m. 2.30	1st	Great Fenton, Pender pit.	Fenton, Staffs.	Stafford Coal and Iron Co., Ltd.	C. T. Cogger - -	39	- - -	Arm broken by projecting through side of cage descending -	–	1
May 12	1.0	7th	Whitfield - -	Tunstall, Staffs. -	Chatterley - Whitfield-Collieries, Ltd.	Elijah Sherrat - -	67	Engineman -	Legs crushed while ascending shaft. He stumbled while getting into cage, and was drawn up with leg out.	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
				Falling into Shaft from Surface.						
1894. Sept. 27 p.m. 1.0	7th	Ketley, Quarry Pit	Wellington, Salop	-	John Churm	–	Contractor	Fell down sinking pit 8 yards deep. Bruised and shaken	–	1
				Things falling from surface, none.						
				Falling from part way down, none.						
				Things falling from part way down, none.						
				Miscellaneous in Shafts.						
Jan. 11 p.m. 5.0	11th	Park Hall (Weston Coyney).	Longton, Staffs.	Park Hall Colliery Co., Ltd.	Oliver Cartlidge	44	Shaftman	Shock to system. Fell off top off cage while examining shaft, and was caught by life belt.	–	1
,, 21 a.m. 2.0	8th	Kemberton, Madeley Wood pit.	Madeley, Salop	Madeley Wood Co.	Wm. Ward	44	Hooker-on	Fell into sump with draught, which he was taking to cage, the cage not being there.	–	1
July 6 p.m. 6.0	1st	Adderley Green	Longton, Staffs.	Stirrup and Pye	**Wm. Bailey**	64	Horse-fettler	Drowned in sump at bottom of shaft	1	–
Oct. 11 a.m 8.30	3rd	Greenfield	Tunstall, Staffs.	W. Adams and Co.	Wm. Rowlands	–	Underlooker	Crushed under cage at bottom of shaft	–	1
Nov. 2 11.30	6th	Shelton No. 2 Rowhurst pit.	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	Saml. Ackley	54	Hooker-on	Crushed by tub owing to cage being moved without signal. Side injured.	–	1
				Miscellaneous Underground. 66 Accidents: 4 Killed; 62 Injured.						
				Explosions of Gunpowder, &c.						
Jan. 15 a.m. 8.30	—	Berry Hill, Railway pit.	Stoke-on-Trent, Staffs.	H. Warrington & Sons	Thos. Roberts	49	Overman	Explosion of charge of powder in paper cartridge while forcing it into shot hole.	–	1
,, 16 p.m. 6.45	1st	Podmore Hall, No. 3 pit.	Halmerend, Staffs.	Midland Coal, Coke, and Iron Co., Ltd.	Jas. Bowler	29	Collier	Explosion of a charge of roburite, which had missed fire; while drilling a fresh hole he drilled into it.	–	1
,, 17 a.m. 7.30	2nd	Ravenscliffe	Tunstall, Staffs.	Goldendale Iron Co.	Danl. Hulson	37	,,	He charged two shots with compressed gunpowder in a crut and lighted one fuze, on returning to light the other fuze the second shot exploded.	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Feb. 7	p.m. 12.30	7th	Park House	Newcastle, Staffs.	J. H. Pearson	Levi Johnson	58	Collier	Burnt by gunpowder remaining in a shot hole which had been fired.	–	1
„ 21	a.m. 8.30	3rd	Silverdale, No. 6 pit	„ „	Butterley Co., Ltd.	Geo. Ford	27	„	Slightly burnt at back by blown out shot of ammonite	–	1
Mar. 19	Noon	6th	Madeley Wood, Kemberton pit.	Madeley, Salop.	Madeley Wood Co.	**Geo. Jones**	56	Getter	Burnt by compressed gunpowder while inserting charge in shot hole, ignited by candle. Died 31st March.	1	–
May 23	—	—	Hulme	Longton, Staffs.	J. & C. Waine	Ed. Matthews	40	Collier	Burnt by gunpowder. Probably drilling out missed shot, or illegally firing a shot.	–	1
June 30	a.m. 8.30	3rd	Adderley Green	„ „	Stirrup & Pye	Saml. Higgins	60	Contractor	Struck by stones from a shot of compressed powder which exploded when he was about 6 yards from it.	–	1
July 6	p.m. 2.30	9th	Wirral	Neston, Cheshire	Wirral Colliery Co., Ltd.	Thos. Abel	26	Getter	Injured by shot of roburite exploding while he was trying to recover it after a mis-fire.	–	1
Sept. 6	12.30	7th	Great Fenton, Pender pit.	Fenton, Staffs.	Stafford Coal and Iron Co., Ltd.	Jas. Dawson	44	Fireman	Hand and face burnt while forcing cartridge of compressed powder into shot hole with wood rammer.	–	1
„ 28	a.m. 8.30	3rd	Leycett, Harrison & Woodburn pit.	Leycett, Staffs.	Madeley Coal and Iron Co., Ltd.	Alf. Lawton	42	Crutter	Head cut by stone from shot of gelignite. The shot was fired by electricity, when the shot firer thought Lawton was in safety.	–	1
Oct. 11	p.m. 3.0	9th	Madeley Wood, Meadow pit.	Madeley, Salop.	Madeley Wood Co.	Thos. Rickers	40	Holer	Struck on face by coal from shot of compressed powder improperly fired while he was passing.	–	1
					Suffocated from natural gases, none.						
					Irruptions of water, none.						
					Falling into water, none.						
					On Inclined and Engine Planes.						
Feb. 21	Noon	4th	Shelton, No. 3 Racecourse pit.	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	Geo. Blackwell	18	Jigger	Hand injured by being drawn into jig wheel while pulling at chain.	–	1
April 11	p.m. 11.30	3rd	Talk-o'-th'-Hill	Talk-o'-th'-Hill, Staffs.	Talk-o'-th'-Hill Colliery, Ltd.	**C. H. Baskeyfield**	30	Crutter	Crushed by tubs in engine dip. A drawbar broke, and seven tubs ran back down dip.	1	–

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. June 8	a.m. 11.0	—	High Carr - -	Newcastle, Staffs.	Reps. of late J. H. Williamson.	Geo. Gerod - -	30	Roadman -	Crushed by tub, owing to breakage of a "lift rail" in jig dip	–	1
Aug. 31	9.30	4th	Clough Hall, No. 6 pit.	Kidsgrove, Staffs.	Birchenwood Colliery Co., Ltd.	Wm. Dean - -	22	Collier -	Leg broken by jig post being knocked out by empty tub while jigging.	–	1
Sept. 19	7.30	—	Lingard Lane -	Bredbury, Cheshire	J. and R. Stott-Milne -	Alf. Cooper -	39	Waggoner -	Crushed by tub while lifting it on to rails in jig brow. He was told not to lift the tub because the brake handle was jammed.	–	1
Oct. 12	9.45	4th	Priors Lee, Woodhouse pits.	Priors Lee, Salop -	Lilleshall Co., Ltd. -	Thos. Haywood -	18	Driver -	Leg broken by tub running amain down jig, owing to him not having hooked empty tub.	–	1
Nov. 5	8.0	2nd	Shelton, No. 8 Racecourse pit.	Hanley, Staffs. -	Shelton Iron Steel and Coal Co., Ltd.	Jas. Brunt - -	24	Roadman -	Crushed by tubs being lowered down jig, where there had been a fall of roof. He was told the tubs were coming, but sat down in the road.	–	1
„ 23	Noon	2nd	Hanley, Mossfield pit	-	Hanley Colliery Co., Ltd.	Geo. Beswick - -	60	Fireman -	Ankle fractured by tub getting off rails near bottom of engine dip.	–	1
Dec. 5	p.m. 1.0	6th	Park Hall (Weston Coyney).	Longton, Staffs. -	Park Hall Colliery Co., Ltd.	Jas. Collins - -	30	Roadman -	Empty tub became uncoupled in jig, and ran back and caught him.	–	1
„ 10	1.30	8th	Leycett, Fair Lady pit.	Leycett, Staffs. -	Madeley Coal and Iron Co., Ltd.	A. C. Williams -	20	Dataler - -	Crushed by tub canting over while changing position of journey in engine dip.	–	1
„ 22	a.m. 3 0	7th	Shelton, No. 8 Racecourse pit.	Hanley, Staffs. -	Shelton Iron, Steel, and Coal Co., Ltd.	Jno. Bott - -	42	Collier -	Hand crushed in jig-wheel. Tub ran loose down jig snatching chain, while his hand was on wheel.	–	1
						By Trams and Tubs.					
Jan. 5	1.30	8th	Biddulph Valley, Havelock pit.	Tunstall, Staffs. -	R. Heath and Sons -	Jno. Oakes - -	16	Asst. Driver -	Leg broken by being run over by tubs drawn by horse, owing to another boy falling while trying to put lockers in.	–	1
„ 11	10.0	4th	Donnington, Freehold pits.	Donnington, Salop.	Lilleshall Co., Ltd. -	Jas. Jones - -	23	Driver -	Crushed between tub and post while bringing a tub out. Hip hurt.	–	1
Feb. 6	9.45	4th	Great Fenton, Sutherland pit.	Fenton, Staffs. -	Stafford Coal and Iron Co., Ltd.	Mark Clews - -	39	- - -	While pushing a loaded tub a lump of coal caught against a bar and crushed his thumb against top of tub.	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Feb. 9	p.m. 12.30	7th	Talk-o'-th'-Hill	Talk-o'-th'-Hill, Staffs.	Talk-o'-th'-Hill Colliery, Ltd.	Jos. Armstrong	24	Waggoner	Crushed between tubs. Run into by a waggoner, who was following him down inclined part of road. Thigh broken.	–	1
„ 22	a.m. 8.0	2nd	Park Hall (Weston Coyney).	Longton, Staffs	Park Hall Colliery Co., Ltd.	Anthony Carter	45	Loader	Wrist fractured by his elbow catching a bar while pulling a tub at top of jig.	–	1
Mar. 17	10.0	5th	Podmore Hall, No. 2 pit.	Halmerend, Staffs.	Midland Coal, Coke, and Iron Co., Ltd.	Wm. Bickley	19	Hooker-on	Crushed by tubs running against him while placing tub in cage. He failed to use stop block.	–	1
July 13	p.m. 6.0	4th	Hyde Lane	Hyde, Cheshire	Hyde Lane Colliery Co., Ltd.	Jno. Hawley	29	Trammer	Leg bruised by tub ending up while he was holding it back, having unintentionally passed point where he should have put lockers in.	–	1
„ 16	a.m. 10.30	4th	Dukinfield	Dukinfield, Cheshire	Dukinfield Coal and Cannel Co., Ltd.	Fred. Wakefield	14	Coupler	Crushed by tubs. He was uncoupling tubs at shafts, when a journey of tubs ran in.	–	1
„ 16	p.m. 5.0	3rd	Shelton, No. 5 Racecourse pit.	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	**Ed. Williams**	19	Loader	Crushed by tub of ironstone, which he was attempting to bring down an incline 1 in 12 without a locker, and going in front of tub.	1	–
„ 20	a.m. 6.15	1st	Donnington, Overton's pit.	Donnington, Salop	Lilleshall Co., Ltd.	Enoch Oveton	17	Driver	Crushed by tub. He was taking a tub along the wall face, going between the tub and the donkey drawing it.	–	1
„ 20	p.m. 6.0	3rd	Clough Hall, No. 4 pit.	Kidsgrove, Staffs.	Birchenwood Colliery Co., Ltd.	F. Coates	14	„	Shoulder dislocated by falling in front of tub drawn by horse	–	1
„ 25	a.m. 8.30	3rd	Madeley Court	Madeley, Salop	Madeley Court Co.	Albert Rea	15	„	Arm broken by horse starting while he was replacing square on draught.	–	1
Sept. 3	p.m. 10.0	2nd	Adderley Green	Longton, Staffs.	Stirrup & Pye	Geo. Monks	22	Coupler	Crushed between tubs while uncoupling horse, which it was not his business to do.	–	1
„ 6	a.m. 4.0	8th	Shelton, No. 3, Rowhurst pit.	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	Patk. Carrol	22	Loader	Arm caught by bar while going down hill in front of an empty tub. Wrist dislocated.	–	1
„ 12	p.m. 2.0	8th	Great Fenton, Bourne pit.	Fenton, Staffs.	Stafford Coal and Iron Co., Ltd.	Thos. Eaton	20	Waggoner	Thumb crushed while taking load through a door, by a piece of ironstone catching door frame.	–	1
„ 24	a.m. 7.30	2nd	Talk-o'-th'-Hill	Talk-o'-th'-Hill, Staffs	Talk-o'-th'-Hill Colliery, Ltd.	Fred. Moulton	14	Pony-driver	Head and neck injured by being struck by tubs brought out to shunt by another boy.	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Sept. 25	p.m. 10.0	8th	Podmore Hall, Minnie pit.	Halmerend, Staffs.	Midland Coal, Coke, and Iron Co., Ltd.	Geo. Thompson -	13	Attendant to Examiner.	Head crushed between tubs while unhooking horse.	–	1
Oct. 1	2.30	9th	Silverdale, No. 17 pit	Newcastle, Staffs.	Butterley Co., Ltd. -	Elijah Norcup -	40	Collier -	Small bone of leg broken, by tub running against him. The waggoner lost his light, and allowed the tub to run alone.	–	1
„ 16	4.30	2nd	Donnington, Grange pit.	Donnington, Salop	Lilleshall Co., Ltd. -	Hy. Guest - -	17	Driver -	Crushed by tub while going in front of it, and holding it back.	–	1
„ 19	a.m. 9.30	—	Poynton and Worth, Park Oval pit.	Poynton, Cheshire	Lord Vernon -	Jas. Higginbotham -	16	Driver -	Head injured and crushed internally by tub getting off rails and knocking post and bar out.	–	1
„ 20	4.0	7th	Leycett, Fair Lady pit.	Leycett, Staffs. -	Madeley Coal and Iron Co., Ltd.	Stephen Cook - -	30	Dataler -	Crushed by tub while loading it in dip of 10°, owing to sprag coming out.	–	1
Nov. 5	Noon	6th	Bunker's Hill -	Audley, Staffs. -	W. Rigby & Co. -	Geo. Ankers - -	26	Loader -	Crushed by tub after lifting it on to rails in thirling, not having secured chain before doing so.	–	1
„ 16	p.m. 1.0	7th	Great Fenton, Sutherland pit.	Fenton, Staffs. -	Stafford Coal and Iron Co., Ltd.	Jno. Jones - -	16	Driver -	Leg injured, by tub getting off rails while he was driving a journey out.	–	1
„ 20	a.m. 10.0	4th	Donnington, Muxton Br. pit.	Donnington, Salop	Lilleshall Co., Ltd. -	Jas. Hancock -	16	Driver -	Arm fractured. The horse suddenly backed while he was driving it.	–	1
Dec. 14	11.0	5th	Fair View - -	Dawley, Salop -	Coalbrookdale Co., Ltd.	Thos. Jones - -	15	Driver -	Crushed by tub drawn by horse while going in front of tub to hold it back.	–	1
„ 21	9.0	3rd	Newchapel - -	Tunstall, Staffs. -	R. Heath & Sons -	Geo. Holland - -	14	Waggoner -	Finger crushed by projecting piece of ironstone catching side of road, while he was bringing tub out.	–	1
						By Machinery Underground.					
Aug. 25	1.0	4th	Donnington, Granville pit.	Donnington, Salop	Lilleshall Co., Ltd. -	Benj. Caswell - -	38	Stoker -	Arm crushed between wheel for driving pump and wall, while engaged in splicing the rope.	–	1
Dec. 13	p.m. 10.0	2nd	Wirral - -	Neston, Cheshire -	Wirral Colliery Co., Ltd.	Ed. Williams - -	23	Drawer -	Struck on head by handle of crab, while he was winding a tub up.	–	1
						By Underground fires, none.					

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
						By Ropes and Chains Breaking.					
Feb. 13	p.m. 10.45	3rd	Apedale, Watermills pit.	Newcastle, Staffs.	Midland Coal, Coke, and Iron Co., Ltd.	D. Knight	34	Taker-off	Crushed by tubs at bottom of jig, owing to breakage of short chain at end of rope. Thigh broken.	–	1
May 7	a.m. 12.30	7th	Whitfield	Tunstall, Staffs.	Chatterley - Whitfield Collieries, Limited.	Thos. Davenport	15	Taker-off	Leg broken by tub running down dip, owing to failure of a D link.	–	1
„ 11	8.0	1st	Park Hall (Weston Coyney).	Longton, Staffs.	Park Hall Colliery Co., Ltd.	J. Moore	42	Dataler	Head and arm injured by tub in engine dip. The dip rope had broken in the shaft, and was caught by cage, and jerked the tubs in the dip.	–	1
						Sundries Underground.					
Jan. 20	Noon	6th	Wombridge, Rose and Crown Pits.	Wellington, Salop	Hopley Bros.	**Isaac Vaughan**	61	Collier	Injured his side while knocking a sprag out. Died 18th March.	1	–
„ 27	a.m. 9.30	4th	Knutton Manor	Newcastle, Staffs.	Knutton Manor Mining Co., Limited.	Jas. Wilcox	48	„	While placing a piece of ironstone on waggon it fell on to his foot and broke the splint bone.	–	1
Mar. 6	7.0	1st	Apedale, Watermills pit.	„	Midland Coal, Coke, and Iron Co., Ltd.	Geo. Hall	21	„	Caught his arm against a nail in a post and lacerated muscle, while stepping out of road of coal being pulled off face.	–	1
April 8	p.m. 5.0	11th	Longton Hall	Longton, Staffs.	Longton Hall Co., Ltd.	Wm. Dean	40	Sinker	Scalded by stepping into hot water accumulated from steam-pipe joint of underground pumping engine.	–	1
May 18	a.m. 10.0	4th	Donnington, Barn pit.	Donnington, Salop	Lilleshall Co., Ltd.	Isaac Smith	25	Driver	The chain gears of his horse caught a rail lying loose on the road and caused it to strike Smith, breaking his jaw and collar bone.	–	1
„ 23	—	—	Highley	Highley, Salop	Highley Mining Co., Ltd.	F. Wheeler	18	„	Kicked on back by mare which he was driving	–	1
Sept. 17	p.m. 2.0	8th	Shelton, Deep pit	Hanley, Staffs.	Shelton Coal, Coke, and Iron Co., Ltd.	J. B. Seargant	18	Waggoner	Fell down and broke his arm while running out at loosit	–	1
Oct. 6	a.m. 7.0	1st	Donnington, Granville pit.	Donnington, Salop	Lilleshall Co., Ltd.	Ed. Lees	50	Getter	Leg broken by turn rail falling against it while he was changing rails.	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Oct. 16	a.m. 7.30	2nd	Biddulph Valley, Havelock pit.	Tunstall, Staffs.	R. Heath & Sons	Ed. Pritchard	18	Driver	Kicked on temple by horse	–	1
„ 24	10.0	4th	Great Fenton, Sutherland pit.	Fenton, Staffs.	Stafford Coal and Iron Co., Ltd.	Thos. Stephenson	33	Collier	Hand struck by pick used by another collier	–	1
Nov. 17	p.m. 1.0	8th	Talk-o'-th'-Hill	Talk-o'-th'-Hill, Staffs.	Talk-o'-th-Hill Colliery Ltd.	Wm. Brownsword	17	Driver	Kicked by horse while taking it to stables	–	1
Dec. 10	6.0	12th	Wombridge, Rose and Crown pits.	Wellington, Salop	Hopley Bros.	Rd. Millington	56	Getter	Fell off tub at bottom of shaft while repairing the walling	–	1

On Surface. 35 Accidents: 6 Killed; 29 Injured.

By Machinery on Surface.

Jan. 31	a.m. 10.0	4th	Hanley	Hanley, Staffs.	Hanley Colliery Co., Ltd.	Enoch Cox	61	Sawyer	Left thumb cut off while working at circular saw	–	1
Mar. 10	11.15	6th	Talk o'-th'-Hill	Talk-o'-th'-Hill, Staffs.	Talk-o'-th'-Hill Colliery, Ltd.	Wm. Thirlwell	51	Fitter	A piece of timber thrown from a circular saw struck him as he was passing four yards away. Arm broken and side bruised.	–	1
April 1	p.m. 3.0	8th	Clough Hall, No. 4 pit.	Kidsgrove, Staffs.	Birchenwood Colliery Co., Ltd.	Thos. Williams	36	Engineer	Leg broken by donkey pump starting suddenly while he was using a pole to start it, as it had stuck on centre.	–	1
„ 10	a.m. 11.30	5th	Adderley Green	Longton, Staffs.	Stirrup and Pye	Hy. Fox	28	Sawyer	Finger cut off while working at circular saw	–	1
„ 17	p.m. 8.45	10th	Shelton, Rowhurst pit.	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	Saml. Soulsby	50	Fitter	Three fingers of right hand cut off by eccentric sheave balance weight of screening machinery while going to oil it in dark confined space.	–	1
May 11	a.m. 11.0	5th	Jammage	Newcastle, Staffs.	Representatives of the late J. Wedgwood.	Ch. Webb	60	Engine tenter	Left hand crushed by cog-wheels of washing machinery, he stumbled on a gangway.	–	1
„ 31	11.0	5th	Shelton, Colliery shops.	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	Jos. Higton	19	Smith	Foot crushed while working at steam hammer	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. July 29	a.m. 10.0	4th	Shelton Colliery shops.	Hanley, Staffs.	Shelton Iron, Steel, and Co., Ltd.	Wm. Allman	17	Stoker	Finger crushed while driving belt into grindstone	–	1
Oct. 19	6.15	1st	Whitfield	Tunstall, Staffs.	Chatterley - Whitfield Collieries, Ltd.	**Isaac Worthington.**	36	Engineman	Crushed by revolving shaft at screen while oiling machinery in motion contrary to rule.	1	–
Dec. 8	p.m. 3.30	2nd	Priors Lee, Stafford pits.	Priors Lee, Salop	Lilleshall Co., Ltd.	Geo. Evans	45	"	Ribs broken and side lacerated by spur gearing of capstan engine while attempting to oil a bearing with the engine in motion.	–	1
						Boilers Bursting, none					
						Railways and Tramways.					
April 5	11.30	—	Dukinfield, Dewsnap pit.	Dunkinfield, Cheshire.	Dunkinfield Coal and Cannel Co., Ltd.	Jas. Streeter	50	-	Crushed between trucks; while pushing one truck another ran against him, which he had left without the brake on.	–	1
" 6	a.m. 2.30	7th	Shelton, Rowhurst pits.	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	Thos. Babb	33	Waggon man	Crushed between wall and truck. Too little room where it was necessary to use the brake.	-	1
May 21	p.m. 11.0	3rd	"	"	" "	John Gough	44	Pointsman	Crushed between trucks; while lowering a truck from screens another ran against him which he had left unsecured.	–	1
" 29	3.0	9th	Poynton and Worth, Park pits.	Poynton, Cheshire	Lord Vernon	**Jas. Heppleston**	15	Screen boy	On leaving work he got on to a ruck of coal being moved from the screens which collided with other trucks being shunted, and he fell off and was run over.	1	–
Aug. 1	a.m. 10.30	5th	Shelton, Deep pit	Hanley, Staffs	Shelton Iron, Steel, and Coal Co., Ltd.	Jno. Proctor	31	Shunter	Fell while attempting to cross line between horse and truck, and his leg was run over by the truck, causing a compound fracture.	–	1
" 10	p.m. 12.45	6th	Foxfield	Cheadle, Staffs.	Foxfield Colliery Co., Ltd.	**Rd. Whitehurst**	67	Coal loader	Crushed between trucks on colliery sidings	1	–
Sept. 5	4.45	11th	Apedale, Burley pit	Newcastle, Staffs.	Midland Coal, Coke, and Iron Co., Ltd.	A. Horne	26	Coal washer superintendent.	Collar bone and two ribs broken while moving trucks at washer.	–	1
" 24	2.15	9th	Berry Hill	Stoke-on-Trent, Staffs.	H. Warrington & Sons	**W. Waine**	14	Airway boy	While leaving work he got on to a set of tubs on a surface incline, and was knocked off while the tubs were passing under a low bridge.	1	–

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Sept. 28	a.m. 2.0	—	Donnington	Donnington, Salop	Lilleshall Co., Ltd.	Jos. Davies	–	Miner	Arm badly crushed. Fell while getting off waggons in motion on private branch railway. He was on his way to work.	–	1
Nov. 16	p.m. 4.30	11th	Priors Lee, Woodhouse pits.	Priors Lee, Salop	,, ,,	Danl. Wylde	27	Shunter	Crushed between waggons while coupling them. He was on the buffers, but should have used a coupling pole.	–	1
						Miscellaneous on Surface.					
Jan. 8	p.m. 1.30	7th	Sneyd	Burslem, Staffs.	Sneyd Colliery and Brickworks Co., Ltd.	Geo. Steele	55	Screener	Fell while jumping from a truck on to stage and broke his arm.	–	1
,, 26	12.45	7th	Clough Hall, No. 6 pit.	Kidsgrove, Staffs.	Birchenwood Colliery Co., Ltd.	**Wm. Birchall**	14	Dirt-picker	While he was cleaning up under screens a tub of coal was tipped and a piece of coal about 12 lbs. in weight jumped over baffler of screen, and struck him on the head.	1	–
Feb. 1	3.0	9th	Bargoe	Dukinfield, Cheshire.	T. Blocksage	Jas. Winterbottom	50	Pony-driver	Fell from tipler on to road below. Shoulder bone broken	–	1
Mar. 15	a.m. 11.0	5th	Shelton, Rowhurst pits.	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	Jno. Vigars	21	Engineman	Leg broken by rail slipping off truck during unloading. Vigars was only looking on.	–	1
April 14	10.0	4th	Apedale, Burley pit	Newcastle, Staffs.	Midland Coal, Coke, and Iron Co., Ltd.	Thos. Gater	71	Carpenter	Concussion of brain, caused by falling through hole in upper floor of washing house in course of erection.	–	1
,, 19	11.45	2nd	Bank Farm	Harecastle, Cheshire.	H. Brown & Co.	Saml. Fletcher	28	Banksman	Arm deeply cut by cotter in axle of tub while he was tipping it	–	1
,, 21	2.0	8th	Shelton, Rowhurst pit.	Hanley, Staffs.	Shelton Iron, Steel, and Coal Co., Ltd.	Wm. Wedge	45	Stoker	Burnt on face and neck by outburst of flame from Meldrum's boiler furnace while stoking without shutting blast off.	–	1
Sept. 6	8.0	2nd	Apedale, Burley pit	Newcastle, Staffs.	Midland Coal, Coke, and Iron Co., Ltd.	Jas. Darlington	26	Banksman	Crushed between tubs on pit bank	–	1
,, 17	10.30	5th	Madeley Court, Halesfield pit.	Madeley, Salop.	Madeley Court Co.	E. Candliss	48	Blacksmith	Balance weight fell through manhole of boiler in which he was working and broke his leg.	–	1
Oct. 25	p.m. 12.30	7th	Mossfield	Longton, Staffs.	W. Rigby & Co.	Jas. Malloy	34	Labourer	Arm broken by clack box of pump hung in blocks striking him	–	1

List of Fatal Accidents, &c.—*continued.*

Date and Hour of the Accident.		Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed or injured.	Reputed Age.	Occupation.	Cause of Accident and Remarks.	No. of Persons killed.	No. of Persons injured.
1894.	a.m.										
Nov. 10	11.15	6th	Sneyd - -	Burslem, Staffs. -	Sneyd Colliery and Brickworks Co., Ltd.	**Thos. Taylor** -	22	Weightman -	Knocked down and run over by cart at colliery wharf - -	1	–
„ 18	9.30	3rd	Hyde Lane - -	Hyde, Cheshire -	Hyde Lane Colliery Co., Ltd.	Wm. Johnson - -	–	Stoker - -	Scalded while cleaning boiler. Another stoker opened the mud tap of another boiler which admitted steam.	–	1
„ 21	1.0	7th	Madeley Court, Double Coal pit.	Madeley, Salop. -	Madeley Court Co. -	Wm. Heighway - -	70	Labourer -	While helping to lift a tub on the rails, the horse started and the tub fell on his leg, breaking the shin bone.	–	1
Dec. 11	1.0	4th	Draycott - -	Cheadle, Staffs. -	Draycott Colliery Co. -	Saml. Beardmore -	16	„ - -	Leg broken by a piece of timber falling on it, while he was unloading a truck of timber.	–	1
„ 17	4.30	2nd	Apedale, Burley pit -	Newcastle, Staffs. -	Midland Coal, Coke, and Iron Co., Ltd.	Alf. Williams - -	18	Coal-tipper -	End of finger cut off by tub falling back while he was siding it over.	–	1
									Total - - -	27	200

Report of Assistant Inspector.

Newcastle, Staffordshire,
16th February 1895.

SIR,

IN accordance with section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the year 1894 I exercised the duties of Inspector of Mines in the district of North Staffordshire, Cheshire, and Shropshire, and that in doing so I acted as assistant to and under the direction of Mr. W. N. Atkinson, the Inspector in charge of the district.

I have, &c.
(Signed) HUGH R. MAKEPEACE.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Office, Whitehall.

MINES.

REPORT

OF

THOMAS BELL, Esq., H.M. INSPECTOR OF MINES

FOR THE

DURHAM DISTRICT (No. 4),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887, the Metalliferous Mines Regulation Acts, 1872 and 1875, and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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1895.

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Mr. Bell's Report.

REPORT on the INSPECTION of MINES in the DURHAM DISTRICT, comprising the southern part of the county of DURHAM, the county of WESTMORELAND, and the North Riding of the county of YORK, under the Coal Mines Regulation Act, 1887; the Metalliferous Mines Regulation Acts, 1872 and 1875; with the Slate Mines (Gunpowder) Act, 1882; from the 1st day of January to the 31st day of December 1894 inclusive: By THOMAS BELL, Esq.

SIR, Shamrock House, Durham, March 15th, 1895.

I HAVE the honour to submit, for your information, as required by section 43 of the Coal Mines Regulation Act, 1887, and by section 20 of the Metalliferous Mines Regulation Act, 1872, my twenty-second Annual Report as Chief Inspector of Mines for the Durham Inspection District (No. 4), on the working of these Acts in South Durham, Westmoreland, and the North Riding of the county of York, for the year ending the 31st December 1894.

During the year I have been ably assisted, as heretofore, by Mr. William Walker, of Durham, and Mr. John Plummer, of Bishop Auckland, Assistant Inspectors of Mines, whose reports, as required under the Metalliferous Mines Act, are herewith enclosed.

My official duties have fully occupied me during the whole of the year, necessitating my travelling and being from home on 291 days and 49 nights. During that time I travelled 8,776 miles by railway and 3,246 miles by road, or a total distance of 12,022 miles.

All the correspondence has, as usual, passed through my hands and been attended to; much of it had to be done at nights on my return home from official visits. All the various requirements of the Acts have also been attended to, and all complaints received from the workmen, whether anonymous or otherwise, have been properly investigated. I have also attended several meetings of coal owners and workmen, in cases of dispute, and have been engaged at the Home Office, as a member of the Statistical Committee, in tabulating and arranging the mineral statistics of the United Kingdom.

Mr. Walker reports to me that he was on official duty on 302 days, visited 373 collieries and other mines, attended 50 inquests, and to 11 complaints of workmen, made 202 underground inspections, and travelled 4,185 miles by rail, and 2,897 miles by road, or a total distance of 7,082 miles travelled in the performance of these duties during the year. He had seven days' leave of absence.

Mr. Plummer reports that he was officially engaged on 298 days, visited 371 collieries and other mines, attended 37 inquests, and to eight complaints made by the workmen, made 212 underground inspections, and travelled 6,441 miles by rail, and 1,797 by road, or a total distance of 8,238 miles travelled in the performance of these duties. He had seven days' leave of absence, and was unable, owing to sickness, to travel on four days.

Jointly we made 860 visits to mines, 473 of which were underground, and 387 in connexion with work and inquiry above-ground; we attended 97 inquests and adjourned inquests, and several other attendances were at solicitors' offices, Examination Board, and other meetings incidental to the multifarious duties devolving on an Inspector of Mines.

The total number of miles travelled jointly in the performance of inspection duties in the district during the year was 27,342.

MINERALS PRODUCED.

The total weight in statute tons of mineral produced in the Durham District, at the different classes of mines, for the year under notice, is as follows:—

At Coal Mines.

No. of Inspection District.	District and Part of District.	Minerals raised.						
		Coal.	Fireclay.	Ironstone.	Oil Shale.	Other Minerals. Tons.	Other Minerals. Description.	Total.
		Tons.	Tons.	Tons.	Tons.			Tons.
4	Durham:—							
	Durham, South	22,934,221	230,873	—	—	—	—	28,219,304
	Westmoreland	1,234	—	—	—	—	—	
	Yorkshire, N.R.	4,010	—	—	—	—	—	
	Yorkshire, Cleveland.	—	—	5,048,966	—	—	—	
Totals for 1894 - -		22,939,465	230,873	5,048,966	—	—	—	28,219,304
" " 1893 - -		21,827,789	276,519	4,625,520	—	—	—	26,729,828
There therefore appears to be an increase of -		1,111,676	—	423,446	—	—	—	1,489,476
There therefore appears to be a decrease of -		—	45,646	—	—	—	—	—

At Metalliferous Mines.

No. of Inspection District.	District and Part of District.	Mineral raised.						
		Iron Ore.	Lead Ore.	Slate.	Stone.	Other Minerals. Tons.	Other Minerals. Description.	Total.
		Tons.	Tons.	Tons.	Tons.			Tons.
4	Durham:—							
	Durham, South -	2,679	9,214	641	366	2 30	Copper ore - Barytes -	108,023
	Westmoreland -	—	1,461	1,753	—	437 1,200	Barytes - Gypsum -	
	Yorkshire, N.R.	—	430	12,630	76,890	289 1	Barytes - Jet - -	
Totals for 1894 -		2,679	11,105	15,024	77,256	1,959	—	108,023
" " 1893 - -		—	11,261	15,292	76,493	3,478	—	106,524
There appears to be an increase of - -		2,679	—	—	763	—	—	1,499
There appears to be a decrease of - -		—	156	268	—	1,519	—	—

At Salt Wells and Openworks.

Part of District.	Mineral raised. Gypsum.	Fireclay and Ganister.	Salt from Brine.	Slate.	Other Minerals. Tons.	Other Minerals. Description.	Total.
	Tons.	Tons.	Tons.	Tons.			Tons.
Durham, South	—	3,732	255,808	—	2	Fluor Spar	327,091 (Durham, South, Westmoreland and Yorkshire, N.R. together)
Westmoreland	1,990	—	—	960	—	—	
Yorkshire, N.R.	—	2,400	62,199	—	—	—	
Totals for 1894	1,990	6,132	318,007	960	2	—	327,091
„ „ 1893	1,699	4,481	289,198	737	8	—	296,123
There appears to be an increase of	291	1,651	28,809	223	—	—	30,968
There appears to be a decrease of	—	—	—	—	6	—	—

Persons Employed.

The following table shows the number of persons employed, in and about the mines, in this district (including those on private branch railways and tramways, and washing and coking coal) under the Coal Mines Act, during the year 1894:—

No. of Inspection District.	District and Part of District.	Underground. Male Persons. Ages 12 to 16.	Underground. Male Persons. Ages above 16.	Underground. Male Persons. Total.	Above Ground. Ages 12 to 13. Boys.	Above Ground. Ages 12 to 13. Girls.	Above Ground. Ages 13 to 16. Boys.	Above Ground. Ages 13 to 16. Girls.	Above Ground. Above 16. Females.	Above Ground. Above 16. Males.	Above Ground. Total.	Total Underground and Above Ground.
4	Durham:— Durham, South	4,273	51,265	55,538	2	—	1,963	—	11	15,760	17,736	73,274
	Westmoreland	—	12	12	—	—	—	—	—	2	2	14
	Yorkshire, N.R.	2	20	22	—	—	—	—	—	7	7	29
	„ Cleveland.	183	4,402	4,585	—	—	75	—	—	1,104	1,179	5,764
Totals for 1894		4,458	55,699	60,157	2	—	2,038	—	11	16,873	18,924	79,081
„ „ 1893		4,384	53,287	57,671	1	—	1,951	—	10	16,800	18,762	76,433
Showing an increase of		74	2,412	2,486	1	—	87	—	1	73	162	2,648

The same information is given below for the mines under the Metalliferous Mines Act, and also for the salt wells and open works.

No. of Inspection District.	District and Part of District.	Underground. Male Persons. Ages 12 to 13.	Ages 13 to 16.	Ages above 16.	Total.	Above Ground. Ages 10 to 13. Males.	Females.	Ages 13 to 18. Males.	Females.	Ages above 18. Males.	Females.	Total.	Total Underground and Above Ground.
4	Durham :—												
	Durham, South	—	2	582	584	—	—	120	—	223	—	343	927
	Westmorland	—	1	127	128	—	—	14	—	97	—	111	239
	Yorkshire, N. R.	—	9	282	291	—	—	21	—	150	—	171	462
	Totals for 1894	—	12	991	1,003	—	—	155	—	470	—	625	1,628
	„ „ 1893	—	10	1,196	1,206	4	—	189	—	490	—	683	1,889
	Showing an increase of	—	2	—	—	—	—	—	—	—	—	—	—
	Showing a decrease of	—	—	205	203	4	—	34	—	20	—	58	261

Number of persons employed at Salt Wells of South Durham and North Yorkshire :—

Totals for 1894	—	—	—	—	—	—	54	12	604	4	674	674
„ „ 1893	—	—	—	—	—	—	48	14	638	5	705	705
Showing an increase of	—	—	—	—	—	—	6	—	—	—	—	—
Showing a decrease of	—	—	—	—	—	—	—	2	34	1	31	31

Number of persons employed at Open Works :—

Totals for 1894	—	—	—	—	—	—	4	—	48	—	52	52
„ „ 1893	—	—	—	—	—	—	2	—	40	—	42	42
Showing an increase of	—	—	—	—	—	—	2	—	8	—	10	10
Showing a decrease of	—	—	—	—	—	—	—	—	—	—	—	—

Number of persons employed at Metalliferous Mines, Salt Wells, and Open Works :—

Totals for 1894	—	12	991	1,003	—	—	213	12	1,122	4	1,351	2,354
„ „ 1893	—	10	1,196	1,206	4	—	239	14	1,168	5	1,430	2,636
Showing an increase of	—	2	—	—	—	—	—	—	—	—	—	—
Showing a decrease of	—	—	205	203	4	—	26	2	46	1	79	282

Summary of Accidents and Deaths.

During the year I have received notice of 551 accidents from the Coal Mines, 74 of them being fatal, causing 75 deaths, the ratio being one fatal accident to 926, and one person killed to every 914 persons employed in and about the mines, and one fatal accident to 313,113, and one death to every 308,933 tons of mineral raised.

From the Cleveland Ironstone Mines I have received 76 notices of accident, 11 of them being fatal, causing the same number of deaths, the ratio being one fatal accident

and one death to every 520 persons employed in and about the mines, and one fatal accident and one person killed to every 458,997 tons of mineral raised.

There have been four fatal accidents causing five deaths, and I have received eight notices of personal injury occurring at the Metalliferous Mines.

During the year 4,785 persons have been employed on private branch railways and tramways, and in washing and coking coal on premises adjacent to or belonging to the mines, and from these I have received notice of three deaths as having occurred ; all of them on private branch railways and tramways, being a ratio of one life lost to every 1,595 persons employed. Thus showing the result to be a loss of 89 lives as compared with 80 during the year 1893, being an increase of nine in the number of the lives lost at the mines under the Mining Acts, and on private branch railways and tramways, and in washing and coking coal on premises adjacent to or belonging to the mines.

Eighteen deaths have been reported to me during the year as having taken place in and about the mines of the district; but, on investigation, it was found they were not caused by accidents comprised within the Mining Acts. Details will be found in Schedule H.

I have received reports of personal injuries to 24 persons, but no death has occurred, at the coal mines, and also of one death and various injuries to 14 other persons at the Cleveland Ironstone Mines caused by the use of gunpowder. These accidents are chiefly due to the workmen's impatience, and returning to supposed missed shots before the fuse has had time to run up to the charge.

There has also been one accident under this head, causing personal injury to one workman in the Metalliferous Mines. He had not retired to a safe distance, and was struck on the head by a stone thrown from a shot.

The separate fatal accidents, and also the deaths resulting therefrom, in and about the mines in this district (including those on private branch railways and tramways, and in washing and coking coal) under the Coal Mines Act, are given below :—

Number of Inspection District.	District.	Explosions of Fire-damp or Coal-dust.	Falls in Mines, Falls of Sides.	Falls in Mines, Falls of Roof.	Falls in Mines, Total Falls.	In Shafts. Over-winding.	In Shafts. Ropes and Chains breaking.	In Shafts. Whilst ascending or descending by Machinery.	In Shafts. Falling into Shaft from Surface.	In Shafts. Things falling from Surface.	In Shafts. Falling from part way down.	In Shafts. Things falling from part way down.	In Shafts. Miscellaneous.	In Shafts. Total in Shafts.	Miscellaneous Underground. By Explosives.	Miscellaneous Underground. Suffocation by Gases.	Miscellaneous Underground. Irruptions of Water.	Miscellaneous Underground. Falling into Water.	Miscellaneous Underground. On inclined and Engine Planes.	Miscellaneous Underground. By Trams and Tubs.	Miscellaneous Underground. By Machinery.	Miscellaneous Underground. Sundries.	Miscellaneous Underground. Total Miscellaneous Underground.	On Surface. By Machinery.	On Surface. Boilers bursting.	On Surface. Railways and Tramways.	On Surface. Miscellaneous.	On Surface. Total on Surface.	Gross Total.
4	South Durham, Westmoreland, and Yorkshire, North Riding.	2	5	29	34	—	—	1	—	—	3	—	1	5	—	—	—	—	6	16	1	2	25	—	—	8	2	10	76
	Yorkshire—Cleveland ironstone	—	1	5	6	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	3	4	—	—	1	1	2	12
	Total accidents in 1894	2	6	34	40	—	—	1	—	—	3	—	1	5	1	—	—	—	6	16	1	5	29	—	—	9	3	12	88
	„ „ 1893	2	10	28	38	—	1	2	—	—	1	—	2	6	3	—	—	—	5	13	—	1	2	2	—	4	2	8	76
	Showing an increase of	—	—	6	2	—	—	—	—	—	2	—	—	—	—	—	—	—	1	3	1	4	7	—	—	5	1	4	12
	„ a decrease of	—	4	—	—	—	1	1	—	—	—	—	1	1	2	—	—	—	—	—	—	—	—	2	—	—	—	—	—
	Deaths resulting therefrom.																												
	South Durham, Westmoreland, and Yorkshire, North Riding.	2	5	29	34	—	—	2	—	—	3	—	1	6	—	—	—	—	6	16	1	2	25	—	—	8	2	10	77
	Yorkshire—Cleveland ironstone	—	1	5	6	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	3	4	—	—	1	1	2	12
	Total deaths in 1894	2	6	34	40	—	—	2	—	—	3	—	1	6	1	—	—	—	6	16	1	5	29	—	—	9	3	12	89
„	„ „ 1893	2	10	29	39	—	4	2	—	—	1	—	2	9	3	—	—	—	5	13	—	1	22	2	—	4	2	8	80
	Showing an increase of	—	—	5	1	—	—	—	—	—	2	—	—	—	—	—	—	—	1	3	1	4	7	—	—	5	1	4	9
	„ a decrease of	—	4	—	—	—	4	—	—	—	—	—	1	3	2	—	—	—	—	—	—	—	—	2	—	—	—	—	—

The following table shows the separate fatal accidents, and deaths resulting therefrom at the Metalliferous Mines.

—	District.	Explosions of Fire-damp.	Falls of Ground.	In Shafts. Overwinding.	In Shafts. Ropes and Chains breaking.	In Shafts. Whilst ascending or descending by Machinery.	In Shafts. Falling into Shaft from Surface.	In Shafts. Things falling from Surface.	In Shafts. Fall from part way down.	In Shafts. Things falling from part way down.	In Shafts. Miscellaneous.	In Shafts. Total in Shafts.	Miscellaneous Underground. By Explosives.	Miscellaneous Underground. Suffocation by Gases.	Miscellaneous Underground. Irruptions by Water.	Miscellaneous Underground. Falling into Water.	Miscellaneous Underground. On inclined Planes.	Miscellaneous Underground. By Trams and Beds.	Miscellaneous Underground. By Machinery.	Miscellaneous Underground. Sundries.	Miscellaneous Underground. Total { Miscellaneous Underground.	On Surface. By Machinery.	On Surface. Boilers bursting.	On Surface. Miscellaneous.	On Surface. Total on Surface.	Gross Total.
4	Durham, South Westmoreland and North Riding of Yorkshire.	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	4
	There were no fatal Accidents at these Mines during the year 1893.																									

Deaths resulting therefrom.

District.	Explosions of Fire-damp.	Falls of Ground.	Overwinding.	Ropes and Chains breaking.	Whilst ascending or descending by Machinery.	Falling into Shaft from Surface.	Things falling from Surface.	Fall from part way down.	Things falling from part way down.	Miscellaneous.	Total in Shafts.	By Explosives.	Suffocation by Gases.	Irruptions by Water.	Falling into Water.	On inclined Planes.	By Trams and Beds.	By Machinery.	Sundries.	Total Miscellaneous Underground.	By Machinery.	Boilers bursting.	Miscellaneous.	Total on Surface.	Gross Total.
Durham South, Westmoreland, and North Riding of Yorkshire.	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	5

The four following tables also relate to the fatal accidents and deaths, which have occurred at the coal and ironstone mines during the year.

No. 1 gives the number of accidents and deaths therefrom, and also shows the proportion of deaths underground, and above ground to 1,000 persons employed, and of all deaths to every million tons of mineral raised.

County.	No. of Accidents.	Number of Deaths.			Death Rate from Accidents. 1,000 Persons employed.			Number of Deaths per 1,000,000 Tons raised.
		Underground.	Above Ground.	Total	Underground.	Above Ground.	Total.	
Durham South, Westmoreland, Yorkshire, North Riding	76	67	10	77	1·206	·564	1·050	3·323
Yorkshire, Cleveland	12	10	2	12	2·181	1·696	2·082	2·377
Durham District	88	77	12	89	1·280	·634	1·125	3·154

No. 2 shows the nature of the employment of the persons killed.

County.	Underground.		Above Ground.		Total.
	Excavating Coal, or other Minerals or Rock.	Other Occupations.	Picking, Screening and Washing.	Other Occupations.	
Durham, South Westmoreland, Yorkshire, North Riding.	29	38	4	6	77
Yorkshire, Cleveland	6	4	—	2	12
Total	35	42	4	8	89

No. 3 shows the ages and sexes of the persons killed.

Part of District.	Ages.	Under-ground.	Above Ground. Males.	Above Ground. Females.	Above Ground. Total.	Total Under and Above Ground.
Coal Mines	Under 16	7	—	—	—	7
	16 to 20	17	3	—	3	20
	20 to 30	14	2	—	2	16
	30 to 60	28	3	—	3	31
	Over 60	1	2	—	2	3
	Total	67	10	—	10	77
Ironstone Mines	Under 16	—	—	—	—	—
	16 to 20	—	—	—	—	—
	20 to 30	1	—	—	—	1
	30 to 60	8	2	—	2	10
	Over 60	1	—	—	—	1
	Total	10	2	—	2	12
Coal and Ironstone Mines	Under 16	7	—	—	—	7
	16 to 20	17	3	—	3	20
	20 to 30	15	2	—	2	17
	30 to 60	36	5	—	5	41
	Over 60	2	2	—	2	4
	Total	77	12	—	12	89

No. 4 shows the ratios of deaths from accidents in and about the mines of the Durham district, under the Coal Mines Regulation Act, per 1,000 persons employed, and per 1,000,000 tons of mineral raised during the year 1894.

No. of Inspection District.	District.	Death-rate from Accidents per 1,000 Persons. Employed Underground. By Explosions of Fire-damp.	By Falls of Ground.	In Shafts.	Miscellaneous.	From all causes Underground.	Employed Above Ground from all causes Above Ground.	Employed Above and Underground.	Death-rate from Accidents Above and Underground per 1,000,000 Tons of Mineral raised.
4	Durham:— South Durham, Westmoreland, and North Riding of Yorkshire	·036	·612	·108	·450	1·206	·564	1·050	3·323
	Cleveland, Ironstone.	—	1·309	—	·872	2·181	1·696	2·082	2·377

The same information is given below for the mines, under the Metalliferous Mines Regulation Act.

South Durham, Westmoreland, and North Riding of Yorkshire	—	3·988	—	—	3·988	1·600	3·071	—

Details of Deaths caused by Fatal Accidents.

1. *Explosions of Gas.*—There have been two men killed from this cause at the coal mines during the year under notice, and I have received reports of seven other

accidents causing slight personal injuries to eight men. Five of them occurred at collieries in the west part of the district, and two at Cleveland Ironstone Mines. In all the non-fatal cases open lights were used, and gas had seldom, if ever, been seen before.

The two fatal cases also occurred in the western portion of the district at collieries where, as a rule, gas is rarely seen. The first, which is No. 47 on the list, occurred about 6.30 o'clock p.m. on the 17th of August last at Black Boy Colliery, near to Bishop Auckland, causing the death of John Rudd, a coal hewer.

On the 15th of August, or two days before the accident occurred, the deputy, being the competent person appointed under General Rule 4, on making his inspection of the places, before the shift commenced found a small portion of gas and stythe in one of them, rising four inches to the yard, and he placed a fence across it. This gas appears to have remained in the place until the day of the accident.

Deceased was working in a dip place, almost opposite, with a naked light, and it was alleged he had gone through a fence, into the place where the gas was, and it lit up at his candle; the deceased, however, who lived for two days, said he had never been through the fence, but, having heard a fall at a "hitch," on the out-bye side, he went to remove the fallen stone, when some gas, in the hole made by the fall, exploded at his candle severely burning him, and causing such injuries that he afterwards died.

At the inquest the jury returned a verdict that the deceased man met his death, accidentally, through an explosion of gas; stated that they did not think he had been through the fence, and recommended that safety lamps be used in all cases, in future, where gas is present.

Whether this man went through the fence or not, it is difficult to say, and I should not like to express an opinion, but with the recommendation of the jury, that safety lamps be used, in future, in all cases where gas is present, I cordially agree. If they had been used in this case, this death would not have been to record. Since it occurred safety lamps have been used in the district, of the seam, in which this fatality happened.

The second case, which is No. 55 on the list, occurred about 2.30 o'clock p.m. on the 6th of September last, at West Auckland Colliery, causing the death of George Vickers, a coal hewer.

The place in which the explosion occurred, was one of two winnings, in the Brockwell Seam, worked with safety lamps. On the first shift it was off work, on account of the man who was to work in it not having brought his safety lamp with him; on the deceased man coming in, on the next shift, he was given the option of either going into his own place or the one in which his partner had worked, in the first shift, and he chose the latter because of some loose coals being left in it, and where he could work with a naked light. It appears, however, that he had left some tools in the winning, and went into it with his candle, past a caution board, on which it was pointed out that no naked light was to be taken beyond it, and lit up some gas, which so severely burnt him that he died the next day.

The deputy, before the men commenced work, at 4 o'clock a.m., had inspected the place and found it free from gas; he should, however, have fenced it across its whole width when he found it was not going to be at work during the shift of which he had charge, and the deputy of the succeeding shift, after the deceased man decided to go to the place where the coals were loose, should have fenced the winning; but both these men neglected their duty, as did also the other officials of the colliery who were in the district on the day in question, prior to the accident occurring.

The deceased man himself was to blame in a far greater degree, because the reprehensible act he was guilty of, in going past a caution board with a naked light, which he must have known was wrong, was unpardonable, and the fact that he had a safety lamp with him but left it hanging up at the caution board makes what he did all the worse.

If men wilfully commit breaches of the Act and Special Rules, as this man did, it cannot be expected that fatal and other accidents will occur less frequently. I am hopeful, however, that the result of this will have a salutary effect, and that in future I shall not have cause to report such deliberate contravention of the General and Special Rules.

2. *Falls in the Mine.*—The number of deaths at the coal mines, caused by falls of roof and side, was 34, which is the same as last year. The deaths from this cause in Cleveland Ironstone Mines have been six, or one more than last year.

There were also four deaths from falls of ground at the Metalliferous Mines.

The deaths from this cause at all the mines in the district were 44 or 46·80 per cent. of those from all causes, or slightly less than the previous year, an improvement I am glad to observe; but I still think the number should be much less, seeing that, in this district, we have all the timbering done by deputies, who are selected for their skill and knowledge in this class of work. A great number of the fatal accidents are caused by falls from the roof, which occur at slips, hidden until the coal is excavated, and as soon as that is done, the support being taken away, the stone falls without any warning on the unfortunate miner. A large number of these might be prevented, if it was made compulsory that the certificated manager should specify that timber should be set within a certain distance of the faces of the different working places under his charge.

The use of sprags or or holding props should be made compulsory, whether actually required or not. The miners, as a rule, and as will be seen from the description of some of the accidents, are very careless in the use of these supports, and numerous cases of personal injury, as well as deaths, are the result.

The following accidents, under the head of Falls in the Mine, require a more detailed description than is given in the lists.

Number 3 on the list occurred at Etherley Colliery, about 1.30 o'clock p.m. on the 9th of September 1893, causing the death, which took place on the 9th of January last, of Thomas Oxley, a coal hewer.

This man was injured by a stone, measuring 4 feet 6 inches long × 4 feet 6 inches wide × 4 inches thick, falling upon him in his working place.

It appears he was working in what is known as the "back" or second shift, and that the deputy belonging to the previous shift had examined the place, in which the accident afterwards occurred, at 8.30 a.m.; the accident occurred at 1.30 p.m., and no official appears to have been in the place between these times, or for a period of five hours.

At the inquest the jury returned a verdict of accidental death, and further stated that they considered five hours too long a period for a place to go without being inspected by some official, and recommended that deputies in future make more frequent visits to the working places. With this view of the case I cordially agree, I think five hours is too long a time for a working place to be left without an inspection being made by an official, but the Act only requires that at least one inspection shall be made during the shift by deputies.

Number 4 on the list occurred at the Oswald Pit of Craghead Colliery, about 8 p.m. on the 10th of January last, causing the death of William Old, a stoneman.

On the night previous to the one on which the accident occurred deceased, who had the taking down of top canches in the gateways, building pack walls, and setting timber for the purpose of keeping the roof safe next to the goaf, contracted for, fired a shot in one of the gateways, which did not do its work, and the stone was not brought down. As it was near the end of the shift, he did nothing more that night, and the place, in consequence, was not available for the hewers on the following day. The next night deceased went to it first and commenced to set timber, and, while doing so a large stone, measuring 8 feet × 6 feet × 1 foot thick, fell upon and killed him instantly.

It broke off at the end next to the goaf, two sides came to feather edges, and at the other there was a slip or parting in the roof.

There is no doubt deceased was deceived by the slip and feather edges, and more so because the stone fell on the side of the gateway where the coal had not been worked out, and where he would expect the stone to be sound and good. This accident, for which I do not think anyone can be blamed, goes to show how necessary it is that the greatest care and vigilance should always be exercised in the timbering and otherwise securing the roof and sides, and in examining the stone, and especially so in seams where slips or partings in the stone occur or are likely to do so.

Number 8 on the list occurred at Brancepeth Colliery on the 13th February last, about 1.30 o'clock p.m., causing the death of Henry Gray, a coal hewer.

Deceased was working in a broken jud, alongside a lift, out of which all the timber had been drawn, but it had not fallen. There was a slip running through the stone, forming the roof of the old lift and also the place he was working in, and during the shift the stone in the old place commenced to fall and came right across his place, canting out the timber and chocks set for his protection. In an ordinary way, when

the stone fell, it broke off at the timber set for the purpose, but the presence of the slip, in this case, caused it to cant the timber out and let the stone on to deceased, and it killed him instantly.

This is another case of a fall of roof, caused by slips, resulting fatally, and my remarks on the preceding accident are quite as applicable to it.

Number 11 on the list occurred at Hutton Henry Colliery, on the 26th of February last, about 10.30 o'clock a.m., causing the death of Thomas Woodhouse, a coal hewer.

This accident occurred in the Hutton Seam, which is worked on the longwall system. The evidence the man who was working with deceased gave at the inquest describes the accident very well, and I do not think I can do better than quote it. He said: "I was working along with deceased in a longwall face. The deputy had "examined the place during the fore shift, and two shots had been fired in the middle "of the place, and this left a back end on at both sides. Deceased's partner, who had "been in the place the previous shift, told him he had left a jud which would soon be "finished and ready for a shot. Deceased went to one and I went to the other back "end, and had just kirved about six inches when I heard a fall, and on shouting I got "no answer. I went at once and found him under about 5½ tubs of coal. I tried, "along with others who came to the place, to lift the coal off him, but could not do "so, and therefore had to hew it off; when we got him out he was alive, but he died "next day. There was a slip running across the face, behind the coal, which was not "visible before the coal fell. The place was properly timbered, but he had no sprag "props in. There was one lying close to him, but he had not had it set, and there "were plenty of others lying loose in the place for use, if necessary. There is a rule "at the colliery that sprags have to be set at a certain distance apart, and there should "have been two under the jud according to that rule."

The deceased man, by neglecting to sprag his jud, lost his life. He was, no doubt, deceived by the slip at the back of the coal, but it is these slips that make spragging necessary, and no one can tell when they will occur. They have always to be guarded against, and this, in my opinion, is a good reason for making the spragging of juds compulsory, whether it appears to be necessary or not.

The present Special Rule says, "he (the hewer) shall sprag his jud *where necessary*," and thus leaves a loophole for men to get out of a case of this kind; and until it is amended and made to read "he shall *in all cases* sprag his jud," I am afraid accidents of this character will continue to occur. These accidents are a fruitful source of both deaths and personal injury, and too much care cannot be exercised both by officials and workmen in carrying out this defective Special Rule.

Number 33 on the list occurred at Houghton Colliery, on the 2nd of June, about 1 o'clock p.m., causing the death of John Williams, a timber drawer.

Deceased, along with another man, was drawing timber out of a broken jud, and had got four pairs of gears and four chocks out, when the roof fell, completely burying him. He was quite dead when got out. There was very little timber remaining to be drawn, and the stone falling must have canted it out, and thus caused this accident.

He had been at the work over four years, and was, I understand, a very careful and steady man.

Timber drawing is a hazardous occupation, and too much care cannot be exercised in following it.

Number 35 on the list occurred at Brandon Colliery, on the 25th of June, about 2 o'clock p.m., causing the death of Ralph Maughan, a coal hewer.

He was working in a broken jud, loose at both sides, and the timber in the old one on the right-hand side had been drawn. His place became uneasy; the timber was cracking, and he, being frightened, ran into the old place, where there was no timber at all, and a stone fell and killed him on the spot. If he had remained in his own place he would have been safe, for no fall occurred in it for several hours after he was killed. There was plenty of room for him to get back by the side of the tub, but he had evidently lost his presence of mind, as soon as the timber began to break.

Number 39 on the list occurred at Ryhope Colliery on 11th of July, about 9.30 o'clock p.m. causing the death of Thomas Hutchinson, a coal hewer.

It appears that this accident was caused by deceased refusing to obey a deputy's orders.

The deputy was in the place, about two hours before the accident happened, and told the deceased man to take down the top coal, as it was preventing him getting timber set to support the roof, but this he refused to do, saying it was too hard. The deputy then cut him some timber, and went to another place, and deceased continued to work under the top coal, which afterwards fell and killed him.

The deputy was to blame for not sending this man out of the pit, as soon as he refused to do as he instructed him. Under the Special Rules his duty in this respect was perfectly clear, and it is to be regretted that he did not do it, for if he had this accident would not have occurred. The man himself was more censurable even than the deputy; here is a case where rules were established, and officials appointed to see them carried out, in order to increase the safety of the working of the mine, and one of the workmen absolutely refuses to carry out specific instructions, given by one of these officials, and as a result lost his life. It was a reprehensible action, and, as this accident shows, a highly dangerous one.

The deputy was cautioned at the inquest to be more careful, in future, and this he promised to do. I hope he will carry out this promise and that I shall not have, in the future, occasion to report such dangerous practices as occurring at any of the collieries or mines in my district.

Number 43 on the list occurred at Charlaw Colliery, on the 20th of July, about 12.15 o'clock p.m. causing the death of John Green, a coal hewer.

He was working in the brokens, in a jud which was just being turned away. About half an hour before the accident occurred the back-overman visited the place, and told the deputy to set some chocks; and he also told deceased to leave some coal on at the loose end, which he said he would do; this official, however, found, on examining the place afterwards, that a stone had fallen, from the roof; that deceased had not left the coal on, and that the fall was where it should have been; and also that this coal was its only support. The roof before the fall occurred appeared perfectly good and there were no breakers visible, afterwards there were two breakers to be seen, and these caused the accident. Deceased was, I understand, a careful man, and as a rule did all he was told to. Whether he took the coal out, on the loose side, purposely, or he had not understood the back-overman I cannot say, but by taking it out he lost his life.

Number 52 on the list occurred at Wheately Hill Colliery on the 3rd of September, about 3 o'clock a.m., causing the death of James Knight, a stoneman.

Deceased, who was working along with his son, was engaged ripping the roof and building packs in the longwall. They had drilled a hole, charged, stemmed and fired it, and deceased then commenced to build the pack on the right-hand side of the gateway, there was, however, a prop set which impeded his work, and he knocked it out, not before, his son says, sounding the stone, and he also did so afterwards. He was working under where the prop had been set, when a stone, measuring 4 feet long × 2 feet 3 inches wide × 7 inches thick, fell upon him, and so severely injured him that he died five hours afterwards.

I understand deceased was a most careful man, very reliable, and had had many years' experience in stone work, and I am surprised, therefore, when he sounded the stone, after knocking the prop out, he did not discover it was not safe; it had a free side and end next to the gateway, and at the other end there was a slip, and it fell from a free parting.

It was a case of mistaken judgment, I think, which is likely to occur now and again, even with the most experienced and careful men.

Number 58 on the list occurred at Wingate Grange Colliery on the 13th of September about 1 o'clock p.m. causing the death of Robert Wright, a coal hewer.

Deceased was working in a broken jud, and while extracting the coal exposed a stone, in the roof of the shape of a horse's back, with a slippery parting above it, and as soon as the coal, which was its only support, was worked away, it fell without the slightest warning and killed him.

There was a chock set within 3 feet 6 inches of the face, and plenty of loose props lying close to, and the loose side of the jud, or place, was well timbered, but all this proved of no avail to prevent this unfortunate accident.

These "horse backs" are very treacherous and dangerous, and very great care is required to guard against them falling, without any warning, and causing a fatal accident.

Number 64 on the list occurred at Edmondsley Colliery, on the 26th of October last, about 8.30 o'clock a.m., causing the death of Thomas Lowes, a coal hewer.

Deceased was working in a place, loose at one side, in the main coal seam. This seam has two portions of coal divided by a stone band in about the middle of it; and in the working the bottom coal is first kirved out, and then the band is taken down, and the top coal is got by a shot if necessary.

In this particular case there was a breaker in the middle of the place, running from the top to the bottom, and, at an angle, into the goaf, at the left-hand side, and this left a triangular piece of coal, on the loose side, without any support at all. He commenced and kirved the bottom coal out, and while he was filling this coal into the tub, the top portion of the triangular piece of coal, fell upon him, when he was in a stooping position, and killed him.

He had no sprags set, and I am not sure, if he had had one, that it would have prevented this piece of coal falling, but it would have given him some warning and enabled him to get out of the way. He should, I think, have taken this piece of coal down, as he kirved the bottom portion out and took the band down.

It is a seam which must be worked with sprags, and it has been impressed upon both the officials and workmen in it, time after time, how necessary it is, if accidents are to be prevented, that sprags should always be set under the top coal.

Deceased's neglect to either sprag the coal or take it down cost him his life, and I hope the other men will, in future, be most careful in such circumstances.

Number 66 on the list occurred at Binchester Colliery, on the 13th of November, about 12.5 o'clock a.m., causing the death of George Smith, a stone man.

He, along with another stone man, was engaged shooting bottom up, in the working places, in order to make height for the waggons and ponies to travel in, and the timber had evidently been undermined by one of the shots in the bottom, and instead of resetting it, deceased had carelessly thrown it to one side and commenced to clear away the debris, without first securing the roof, when a fall took place and caused his death.

He was usually a careless man about timbering, and had on a previous occasion been suspended from his employment in consequence.

Such accidents as these should never happen. They occur through sheer carelessness.

Number 9 on the lists of accidents occurring at Cleveland Ironstone Mines, occurred at Eston Mines, on the 16th of October about 11.15 o'clock a.m., causing the death of Jesse Walton Lane, a miner.

A shot had been fired in the top of the seam, which knocked a prop out. The deputy was called and reset it, and before recommencing work deceased and the man working along with him examined the roof and thought it safe. The place had commenced to weight, afterwards, and a piece of stone burst off the roof, knocking the prop out again and let some more stone away which caught and killed deceased.

This accident shows how much care is necessary in examining and timbering places. The deputy, when he reset the prop, did not notice any stone that was unsafe, nor did the men working in the place, but notwithstanding, shortly afterwards, a piece fell and caused the death of this poor fellow.

The following table shows the number of deaths caused by falls of roof and sides in the Coal and Ironstone Mines in the Durham Inspection district, during the seven years, 1888 to 1894 inclusive.

It also shows the parts of the mine where the accidents occurred, the percentage of deaths from falls at the face of the workings and at other places together with the

total number of deaths from all causes in the mine, and the total number of persons employed annually underground.

Year.	In the Face of the Working Places.	Between the Face of the Working Places and the Flat.	On the Main Engine, Horse, and Haulage Roads.	In the Waste and at Sundry Other Work.	Total Deaths from Falls Underground.	Percentage of Deaths from Falls in the Face of the Workings.	Percentage of Deaths from Falls in other Parts of the Mine.	Total Deaths from all Causes Underground.	Percentage of Deaths from Falls compared with all other Causes Underground.	Total Number of Persons employed Underground.
1888 -	41	2	3	1	47	87·2	12·8	81	58·0	50,137
1889 - -	39	2	1	2	44	88·6	11·4	74	59·4	52,354
1890 -	33	2	1	2	38	86·8	13·2	63	60·3	55,672
1891 - -	42	3	1	—	46	91·3	8·7	76	60·5	57,994
1892 -	28	1	1	2	32	87·5	12·5	50	64·0	56,818
1893 - -	32	3	1	3	39	82·0	18·0	72	54·1	57,671
1894 -	36	2	2	—	40	90·0	10·0	77	51·9	60,157
Totals -	*251	15	10	10	286	87·76	12·24	493	58·0	390,103
Percentages of totals.	87·76	5·24	3·50	3·50	100·00	100·00		—	—	—

* The total number of deaths which took place in the Cleveland Ironstone Mines from falls during these years was 47. They all occurred in the face of the working places and are included under that heading.

The accident, Number 2, on the Metalliferous Mines list occurred at Goathland Whinstone Mine, on the 5th of October, about 9.30 o'clock a.m., causing the death of John Hodgson, a miner.

It was caused by a fall of stone from the roof, which in this particular place had been trimmed, and it was thought, made secure a month before. The fall took place at a clay back, which is a very unusual thing at this mine, while he and another man were getting other pieces of stone down, without any warning, and killed him on the spot. The other man had a most miraculous escape, he was standing on a bench with deceased, and the stone just missed him when it fell.

This clay back, or parting, misled deceased; it would not be visible before the stone fell, and it shows how much care is required on the part of both officials and workmen to prevent accidents like this one.

Number 3 on the same list occurred at Cliffrigg and Slacks Whinstone Mine on the 14th of November last, about 3.30 o'clock p.m., causing the deaths of David Pearson and William Watson, both miners.

It appears these men had come back about 100 yards from the face of their working and commenced to work some stone where it was easier to get; they got some down, and while filling it away another stone fell, which had been loosened, from a height of 30 feet and killed them both.

It was a most reprehensible proceeding to go back and work stone as they did, and I cannot too strongly condemn such want of regard for safety and all safe methods of working.

At first it was supposed to have been a purely accidental occurrence, but the true aspect of it was given by one of the witnesses at the inquest who was working alongside the deceased men and who admitted they had been "robbing" when the accident occurred.

This is the first fatal accident that has happened at these mines, and they have been working for more than twenty years; this fact makes the present case all the more to be regretted. If men are guilty of such foolhardy actions as these men were, fatal accidents are sure to occur.

Number 4 on the same list occurred at Carrick's Iron Ore Mine on the 15th of November about 1 o'clock p.m., causing the death of Thomas Hodgson, a miner.

It appears a shot had been fired and this displaced a stone, which had been covering a clay back or parting in the stone above; as soon as this happened, the support having been taken away, a large stone fell upon the deceased man without any warning and

killed him. He had examined the stone, both with a light and by sounding it, and thought it was quite safe.

The treacherous clay back, surrounding the stone which fell, was the cause of this unfortunate accident; it is precisely of the same character as number 1 on this list, and my remarks thereon apply with equal fitness to this case.

3. *Accidents in Shafts.*—The number of deaths in the coal mines caused by shaft accidents has been six, which is three less than in 1893. Two men were killed by a stone falling from the side of the shaft, as the cage was ascending. Another got into the cage at bank, and attempted to get out, when it was in motion, and fell down the shaft; another was caught by the cage being moved, as he was getting into it, owing to a mistake in the signals; another was getting out of the cage at a mouthing, and did not observe the gate was closed, and fell back on to the top of the other cage; and the other was killed in a pumping shaft by falling off a bunting on which he was standing.

There have been no shaft accidents at either the Cleveland Ironstone or Metalliferous Mines during the year under notice.

Number 14 on the list occurred at the Louisa Pit, of South Moor Colliery, on the 2nd of March last, at about 4.15 o'clock p.m., causing the deaths of John Barron, a rolleywayman, and William Neal, a driver.

The shaft in which this accident occurred is used for winding the coal from the Low Main Seam, and also for lowering and raising the persons employed in that seam; it is fitted with two cages, each having two decks, carrying one tub on a deck, and when they were being sent up or down, four men were put into each deck, two at each side, or eight in all.

On the day in question, the shift being over, the men were being sent to the surface, and after several cage loads had gone up without any mishap, two men, one of them being Barron, and Neal and another boy, got into the top deck of the cage, on the west side of the shaft; then four men got into the bottom deck, and the onsetter signalled for the cage to be taken away. He says it had gone about 20 yards, when he heard a loud rumbling noise in the shaft, as if something was falling, and then he heard something strike the cage, and this was followed by a large stone falling into the ingate, and the deceased boy's body fell almost immediately after on to the scaffold. He signalled "hold," and the cage was stopped, but it was nearly at bank. On being taken to bank it was found that there was a large dent on the top of the cage, and Barron was lying dead in the bottom, the other man, in the top deck, had one of his hands and head injured, but the other lad was not injured at all, nor were the men in the bottom hole or deck. The boy Neal was on the same side of the cage, as the deceased man, Barron who, I think, was killed by the stone falling on to the top of the cage, just above his head, and he had then fallen to one side and knocked Neal out of the cage, and he fell to the bottom and was quite dead when found by the onsetter.

I, along with Mr. Walker, my assistant, made a careful inspection of the shaft after the accident, and found a piece of stone, weighing about 63lbs., of triangular shape, had fallen out of the shaft, from between two "jacks" or partings, about 200 feet from the Low Main Seam hanging-on, at a point where the shaft is not lined, or protected in any way, and in falling had met the ascending cage, as described above and caused the accident.

It will be well here, I think, to give the evidence of the shaftman, who was examined at the inquest, as to the condition of the shaft, the lining or walling in it, and the periodical examinations made of it. He said, "I have been a shaftman about seven "years. Prior to the accident I examined the shaft on the 28th of February, and I "started about 5.30 p.m., and finished between 7 and 7.30 p.m. Another shaftman "was with me on that occasion: we were both on the top of the cages and had open "torch lights. We went down the east side and came up on the west side cage, and were "lowered and raised at a slow speed. We pay most attention to a place, 24 to 26 "fathoms above the Low Main Seam, just above the Low Main Post, where the stone "is of blue metal. At the third water ring, which is cut out of the natural rock, and "from where the stone fell, it is hard grey post stone. We examined this part. The "report produced is the one made after that examination, and it states we found all "right. The examination of the shafts, under General Rule 5, is done weekly as "required. The examination of the state of the guides, and conductors in the shafts "is made daily pursuant to General Rule 5. On the 1st of March, that is the day before "the accident, Henry Abbott and I made that examination and found all right, and,

" in addition to making this examination, we also looked at the shaft sides, and noticed " nothing wrong. We stopped the cages seven times, to examine the stone. I had " no suspicion of any being loose. The blue metal above the Low Main Post is five or " six fathoms in thickness; it is loose and breaks away in small pieces. We take any " loose pieces of stone we may see off, but there were none to take off on that night. " Water runs down the side of the shafts, and gets into the jacks, and slips, and loosens " the stone. There are 41 fathoms of walling in this shaft. The shaft would no " doubt be safer if it was all walled.

" I examined the place from which this stone fell, about 7 o'clock on the same night " as the accident occurred; the stone is grey post, very close, and hard and triangular " in shape, 63 lbs. in weight and came out above the water ring at the north-east side " of the shaft.

" The cage top is made of steel three-sixteenths of an inch thick, and has three cross " bars, the middle one of round, and the outer ones of flat bar iron, to support it. " I have seen the cage since the accident, it is bulged in, at what would be the south- " west corner, and which would be just above the deceased man Barron's head. The " middle crossbar is broken, and the rivets of one of the outer ones are also broken.

" I think the stone would have sounded solid, if it had been tried, before it fell " away

" We are, at the present time, putting wooden cribs in where the stone is bad above " the Low Main Seam. Five weeks ago we made an examination from the top to the " bottom, on the cradle, and it took six hours to make it."

It was estimated that the stone fell about 160 feet, and that the ascending cage was travelling at 10 feet per second, and this being so, and the weight of the stone 63 lbs., the force of impact, when it and the cage met, would be about $5\frac{1}{2}$ tons.

Until it is made compulsory for all shafts in which men are to be lowered or raised to be walled or lined from top to bottom, accidents of this kind are liable to happen. No matter how good the stone may appear to be, it is always liable to become insecure, from atmospheric and other changes, and fall away as this piece did.

In all the shafts, which have been sunk in this district within the last few years, walling or tubbing has been put in for the whole depth.

I made representations to the Owners and Manager, of this colliery, and they promised to put walling in in all places, which were then unprotected in this shaft.

Number 29 on the list occurred at North Biddick Colliery, on the 29th of May last, about 9.50 o'clock a.m., causing the death of John Kinross, a banksman.

The cage had just come to bank, to the heapstead level, with a tub and tram in it and the latter was loaded with old timber, which it was necessary to take out at the ground level, 22 feet lower down. He took the tub out, and then got inside the cage, beside the timber tram, and told the winding engineman to take the cage to the ground level; this he proceeded to do; but it appears deceased either fainted and fell out, or attempted to get out of the cage before it stopped, and 6 feet above the ground level, and he fell to the bottom of the shaft, a distance of 230 yards, and was killed.

This man had no business to get into the cage to go to the lower level; there were proper steps povided from the heapstead to the ground, and he could have sent the timber down in the cage, and then gone down these and walked to the shaft and got the tram out, and by not doing so he lost his life.

Number 34 on the list occurred at East Hetton Colliery, on the 12th of June, about 11 o'clock a.m., causing the death of Thomas Kane, a coal hewer.

At the time the accident occurred men were being sent to bank from the Harvey Seam. There were two cages in the shaft, each with two decks or holes, and the means of signalling was by electric bells.

Three cage loads of men were sent safely to bank and the top hole of the fourth one was filled, and the onsetter says he signalled three rings for the cage to be raised until the lower deck was level, so that men could get into it, and this was done; two men got in, and deceased was in the act of doing so when the cage was taken away and he was caught between the framing, at the bottom of the shaft, and the cage.

The onsetter then signalled "hold," and the cage was stopped almost instantly, but deceased was quite dead when got out.

If the onsetter did signal three when the top hole of the cage was filled it would appear that the engineman was to blame for moving the cage again before he got a signal to do so; but the engineman says the signal he got was two, which meant "men on," and that the cage was to be taken straight to bank; there happened, how-

ever, to be a lad to go down the pit at the time—and it is a rule that when men are alone they are to be in the top hole—the cage at bank was lowered—when the top deck of the cage, at the bottom, was level with the Harvey Seam, the lower deck of the other cage was level with the heapstead at bank—and when it was lowered the top deck at bank, and the low one at the bottom, came into position respectively; and the lad got into the top hole, and while he was doing so the men were getting into the bottom one of the other cage; the banksman then called to the engineman to take the cage away, and he did so without any signal from the bottom, with this fatal result.

What was the cause of this misunderstanding in the signals it is difficult to say; the onsetter, no doubt, intended to signal three for the cage to be raised from one deck to the other, but whether he only signalled two, or after the bell had rung two something in connexion with it had gone wrong, and thus prevented the third ring from being given, will always be a mystery.

The code of signals was defective and responsible, to a certain extent, for this accident occurring. I think it should have been necessary, after the cage at bank was put opposite the top hole for the boy to get in, for a signal to be given, even if he had no men to get into the bottom hole of the cage, which he had opposite to his hanging-on, by the onsetter before the cage was moved. If this had been required at that time this accident would not have happened, because before the signal was given the cage would have been filled and the men out of the way of danger.

I suggested to the management that this should be done in future, and it was readily agreed to.

The electric bells were done away with, except for coal work, and when the men are being sent up or down the old fashioned rappers are used. They are not so liable to go wrong, and I think with these two additional precautions being taken such an accident as this is not likely to occur again.

Number 53 on the list occurred at South Pontop Colliery, on the 4th of September, about 2.30 o'clock p.m., causing the death of John Tucker, a coupler.

At this colliery there are two shafts, one a downcast, and the other an upcast, about 14 yards apart, and coals are brought to bank at both of them, but the men are only lowered or raised at the downcast shaft. Deceased was working in the Shield Row Seam, which is 9½ fathoms from the surface; all the coals from this surface are sent up the upcast, and it is the onsetter's duty to attend to both shafts.

On the day in question, it appears the deceased boy was sent to bank for a meal for a man who was staying in the pit; the onsetter came from the upcast shaft with him, signalled for the cage to be sent to the Shield Row Seam, put him into it, and then signalled for it to be taken to bank, which was done; the onsetter then returned to his work at the other, or the upcast, shaft. The boy went to the man's house, got the meal, and returned to the pit, and the banksman told him to get into the cage, which had not been moved since he came to bank, and, without doing anything to ascertain whether the onsetter was at the entrance to the Shield Row Seam, sent the cage away. It stopped at that seam, but the onsetter was at the other shaft, and deceased, who had no light with him, attempted to get out of the cage, but did not see or forgot about the gate being closed, and ran his head against it and was knocked back into the shaft. He was found on the top of the other cage, 75 feet below, and was so severely injured that he died on the following day.

There were no means at this shaft, as required by section 49, General Rule 25, of the Coal Mines Regulation Act, of communicating distinct and definite signals from the surface to this seam.

The manager said he did not think it was necessary, as it was only 9½ fathoms, or 19 yards from the surface to this seam, and the General Rule states that the means of communicating signals must be used if the *shaft* exceeds 50 yards in depth. This shaft is 120 yards in depth, and this seam is only one of the entrances to it.

This was not, however, the cause of the accident. The banksman did not carry out his duty, as required by Special Rule 86 of No. 3 Rules, which reads thus: "When "persons are to ascend, or descend, the agreed signal shall be given by the banksman "or onsetter only, except where otherwise authorized; and when persons are descend-"ing, or ascending, the banksman and onsetter shall remain in a position so as to "immediately signal the engineman in case of an accident."

The agreed signal, under this Rule, up to this time, had been by shouting to the onsetter, but in this case the banksman did not do so, and, in consequence, did not enable the onsetter to be at his place to receive the cage. If he (the banksman) had

attended to his part, the onsetter would have gone round to the downcast shaft, and had the gate open, and this boy would not have been killed.

The banksman was severely reprimanded, and the management undertook that he should be dealt with for his neglect of duty.

A down over signal has, since the accident, been put into the Shield Row Seam, and is arranged to signal to both the upcast and downcast shafts at the same time, so that the onsetter can hear any signal that is given whichever shaft he may happen to be at.

4. *Miscellaneous Underground.*—The number of deaths which have taken place under the head of miscellaneous causes underground in the coal mines was 25, or seven more than in 1893; six were on engine and incline planes; 16 from trams and tubs; and two under the head of sundry causes.

There have been four deaths under this heading at the Cleveland Ironstone Mines during the year, which is the same as the preceding year; one was from an explosion of gunpowder, and three came under the head of sundries.

There were no fatal accidents from miscellaneous causes underground at the Metalliferous Mines.

Number 32 on the Coal Mines list occurred at the North Beechburn Coal Company's, Evenwood Colliery, on the 1st of June last, about 2.30 o'clock p.m., causing the death of William Mason, a driver.

This boy was driving a pony between the engine landing and the flat, and was riding on the limbers. He appears to have got his head too high, and been caught between the top of the tub and the roof. Just at the place where the accident occurred there was a piece of coal, about one inch in thickness, sticking to the roof, and it is probable that his head caught this and was then drawn over the top of the tub. The space between the tub and the roof was five inches. I understand he was a careful, sharp, lad, and that the pony was a quiet one.

There have been numerous accidents from this cause, and it will require additional care on the part of the lads themselves, and stricter discipline to be exercised by those in charge of them, before there are fewer.

Number 51 on the list occurred at West Thornley Colliery, on the 1st of September, about 10 o'clock a.m., causing the death of Thomas Henry Murray, a driver.

A set of tubs which he was taking the rope off had just been run down an incline by its own gravitation, and when it left the top of the bank there were two tubs standing behind, with a drag in one of the wheels of the first tub. There was a chock, which the boy who was braking the incline knocked out to let the set pass; he neglected to put this back, and, while the set was running in the bank, the rope, it is conjectured, caught the two tubs standing behind and pulled the drag out of the wheel, if ever it was in, and set the tubs in motion. The deceased must have been taking the rope off the set before it stopped, and therefore had not heard the two tubs coming down. They hit the set with such force as to break the rope in the middle of the bank, and his head was crushed between them and the set.

The chock should have been put across the rail as soon as ever the set left the top of the bank, and if this had been done this accident would not have occurred. The boy at the top of the bank said he had not time to set it, but if that was so, I cannot believe the drag was in the wheel of the tub.

Number 57 on the list occurred at the Consett Iron Company's, Blackhill Drift, on the 12th of September last about 3.45 o'clock p.m., causing the death of John Stokoe, a driver.

This boy, although he was 16 years of age, had only been working in the pit for three or four weeks. For 12 months before that he was employed on the screens, on the surface. He was set to drive between two stations, and had another driver with him until it was thought safe to let him work alone. It appears at one place, on the right-hand side, as he was going out, there was very little space between the tubs and side, and he was warned always to be careful and to ride on the left side of the limbers. He seems to have done this all the time the other driver was with him, but almost as soon as he was left alone he got on to the right or opposite side of the limbers and was caught between the tub and side, and crushed to death. There was plenty of room on the other side, and if he had done as he was told this accident would not have occurred, but where the roof will admit of it, and it would in this case, the space between the tubs and side of the way should not be so small that a boy can be caught. I arranged

with the manager of this pit to take some of the coal off, in order to prevent a recurrence of an accident of this kind at the same place.

Number 65 on the list occurred at Murton Colliery, on the 7th of November last, about 6 o'clock p.m., causing the death of Thomas Craggs, a landing lad.

He was standing at the back of the full set, in a landing, when the empty set was coming in from the shaft, and the latter got off the way at the landing points and struck the full set, forcing it on to deceased, who was so seriously injured that he died about four hours afterwards.

What caused the set to get off the way could not be ascertained; nothing was done to the way, and after the accident the sets went into the landing satisfactorily, indeed the set which got off was brought back and run in without anything whatever being done, and it did not leave the rails. It seems as if a piece of stone had fallen on to the rails.

Opposite to where deceased was standing there were two refuge holes, and he should have been in one of these when the sets were coming into the landing; he had been told to do so by the officials, and by not attending to these instruction lost his life.

Number 69 on the list also occurred at Murton Colliery, on the 28th of November last, about 1 o'clock p.m., causing the death of William Hollis, a landing lad.

An empty set was being taken into the workings from the shaft, and when it got to the first winch, where the ropes are changed, if it is necessary to do so, deceased, who had charge of the winch, hung his chain on to the rope, and was preparing to pull it in so that it could be coupled to another, when the engineman took the set away, without a signal to do so, and the winch handle flew round and hit him on the head, so seriously injuring him that he died on the 19th of December.

The winch was provided with a pall and also had a loose handle; this pall should always be put over before the handle is put on, but in this case deceased had not done this. He had put the handle on, and although one of the witnesses at the inquest said he was reaching over at the time the set was drawn away to put the pall over, I doubt it very much.

The engineman was to blame for taking the set away after he had stopped it, before getting a signal to do so, and at the inquest was warned to be more careful in future. I hope he will give heed to this warning.

I, and also my assistants, have always been most particular about winches being provided with palls, and I believe there are very few in this district which have not got them on. The loose handle is also an additional safeguard against accidents of this description, and if only the boys, and officials in charge of them would exercise care in their use, it would not be my painful duty to have to report cases of this kind year after year.

Number 5 on the list of accidents occurring at the Cleveland Ironstone Mines, occurred at Skelton Park Mines, on the 9th of June about seven o'clock a.m., causing the death of John Chambers, a drilling-machineman.

Deceased had charge of a drilling-machine, and it was his duty to see it moved from place to place. It was mounted on a tram, which ran on four wheels, fitted to the gauge of the tramway; on this tram there was a pillar, round which were two beams, with drilling-engines at one end, and balance weights at the other.

The machine was being moved to a place, and on coming on to a turn it got off the way; it was got on again and a horse attached to it. It got round the turn all right, and past the first straight rail, when it fell bodily over to one side, crushing deceased between it and the side of the place. The first straight rail on the right-hand side was canted, but whether this was caused by the horse getting his foot against it when pulling, or it had been canted over by the machine in falling, it is impossible to say.

It appears to me to be more than probable that when the beams of the machine after coming round the turn swung into the middle of the way, the momentum thus gained had carried the machine and canted the rail over.

The length of the beams was 15 feet, and the pillar on which they revolved was 7 feet high, and the weight of the whole machine was 2 tons 15 cwts.

It will readily be seen it was very top heavy; it was of an antiquated type, and I made representations to the management, and a promise was made that lower pillars would be adopted, and one of the beams done away with, and this has since been done; the pillars have been reduced 3 feet, and the weight by one ton, and I am therefore hopeful that a fatality of this kind will not happen again.

Number 10 on the same list occurred at Skelton Mine, on the 6th of November, about 10 o'clock a.m., causing the death of Charles Tubby, a deputy.

He along with another deputy, was putting in a baulk of timber. They lifted one end of it into a hole, which had been prepared for it, and deceased wedged the other end into its place; he then put some packing on to the top of it, and while knocking this in, he moved the wedging end of the baulk and it fell upon his chest, and he fell with it a distance of 10 feet on to the edge of an empty tub. He was killed instantly. The baulk cannot have been very well wedged to commence with, but I understand he was a careful and well experienced man, and I am, therefore, compelled to conclude that he thought he had securely fastened it, and that the occurrence was purely accidental.

5. *Accidents on the Surface.*—There have been 10 people killed on the surface at the coal mines, being two more than in the preceding year. Two were killed by being run over by locomotives, while they were crossing the branches; one man, a banksman, sprained himself while pushing a tub into a tippler, and died ten days afterwards; two got their feet fast in a crossing while lowering or shunting waggons, and were run over; one was struck by a drag in a waggon on the hip causing injuries from which he eventually died; one, a boy, was crushed between a truck and screen leg; one fell off a quay wall, while assisting to load timber, and received fatal injuries; one fell off a brake in front of some waggons, and was severely crushed, owing to the brake not being pinned on; and another was attempting to get on a set of waggons while they were in motion and fell, and was run over.

There were two fatal accidents on the surface at the Cleveland Ironstone Mines, during 1894; there have been none for three years previously. One, a blacksmith, received a slight scratch on his hand with a piece of iron and eventually died from blood-poisoning; and the other died from injury received to his foot five months before, caused by jumping off a set of waggons on a private tramway.

Two of the accidents on the surface at the coal mines and one at the Cleveland Ironstone Mines, occurred on private branch railways; accidents of this kind were for the first time, included in the summaries in the year 1893.

There was one fatal accident, on the surface, at the Metalliferous Mines; there were none in 1893. It was No. 1 on the list and occurred on the washing floor, of Greenlaws Mine, on the 14th of March, about 5 o'clock p.m., causing the death of a boy named John William Walton.

His father, who lived not far away, went to a well close to the washing floor, and hearing the water wheel going, he looked and saw something white revolving round the shaft connecting the wheel to the buddle, and on getting close to, he discovered his son hanging between the shaft of the wheel and the bearing baulk.

The boy had no business at the place. The machinery had not been at work for a week, prior to the accident, and he must have turned the water on, out of curiosity, to see the water wheel in motion, and been walking along the bearing baulk of the buddle, and been caught between it and the shaft. He must also have had a duplicate key of the valve to turn the water on, for the one kept by the foreman washer was hidden by him and found after the accident in the place where he had put it.

No one can be blamed for this accident except the deceased boy himself; he was trespassing and doing what he had no business to do; and unfortunately paid the penalty of his folly with his life.

The following table is of interest as showing the hour of the shift, that is during what hour, after the commencement of their shifts, the fatal accidents happened to persons employed in and about the coal and ironstone mines, under the Coal Mines Regulation Act. In this table are included those accidents which have taken place,

during the years 1893 and 1894, on private branch railways, tramways, and in washing and coking coal on premises adjacent to or belonging to the mines.

Year.	Name and Number of District.	Underground.													Above ground.													Total number of fatal accidents.
		1st hour.	2nd hour.	3rd hour.	4th hour.	5th hour.	6th hour.	7th hour.	8th hour.	9th hour.	10th hour.	11th hour.	12th hour.	More than 12 hours.	1st hour.	2nd hour.	3rd hour.	4th hour.	5th hour.	6th hour.	7th hour.	8th hour.	9th hour.	10th hour.	11th hour.	12th hour.	More than 12 hours.	
1890	Durham (North) comprising South Durham, Westmoreland, and the North Riding of Yorkshire.	1	8	11	8	10	7	6	6	3	—	1	—	2	1	—	—	1	—	1	—	—	—	—	—	—	1	67
1891		8	7	7	13	6	15	6	4	4	4	—	—	—	3	—	1	—	—	—	—	—	1	2	—	—	—	81
1892		4	3	7	10	4	8	7	3	1	2	—	—	—	—	—	2	—	—	—	—	—	2	—	—	—	—	53
1893		4	6	14	8	8	13	6	5	2	2	—	—	—	—	—	2	1	2	2	—	1	—	—	—	—	—	76
1894		7	6	11	8	17	12	8	2	3	2	—	—	—	1	1	1	2	1	1	1	3	—	1	—	—	—	88
	Total for 5 years -	24	30	50	47	45	55	33	20	13	10	1	—	2	5	1	6	4	3	4	1	4	3	3	—	—	1	365

The same information, for the year 1894, with respect to accidents occurring at mines under the Metalliferous Mines Act is given below.

1894	Ditto.	—	—	1	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	4

DAYS WORKED.

During the year under notice the collieries and mines of the district have worked fairly well, which is to some extent accounted for by the general stoppage of the mines in Scotland for an extended period.

The total number of days, the coal and ironstone mines have worked, as returned under Schedule III. of the Act during the last two years is as follows:—

Coal mines during 1893	- -	54,271	
,, ,, ,, 1894	- -	52,472	being a decrease of 1,799 days.
Ironstone mines during 1893	-	5,925	
,, ,, ,, 1894	-	6,469	being an increase of 544 days.

Making a total decrease of pits working days during the year of 1,255

This return seems to me to be of no practical value whatever; it will be seen from the returns that there is an increased production of 1,489,476 tons of mineral during the year, with a decrease of 1,255 pits working days; this cannot arise from an increased tonnage raised from each mine during the time, as a matter of fact it is not so, but may, and possibly does, arise from the splitting up of pits working days, in cases where it is necessary, for the time being, to supply only a certain class of coal when one section of the pit or any particular seam may be stopped, and it depends entirely on the view the manager takes whether he returns the pit as working a full day or any fractional part of one.

IMPORTS OF SPANISH ORE INTO NORTH-EAST PORTS; MAKES OF HEMATITE AND CLEVELAND IRON FOR LAST FIVE YEARS.

The following table shows the total imports of iron ore (chiefly Spanish or Hematite) into the north-east ports of England, and the production of ironstone in the Cleveland Ironstone Mines (both of which are smelted within the area of the Cleveland district) during the past five years. It also shows the quantity of pig-iron made from the Cleveland and Hematite ores respectively during the same period, and that the make of

iron from this imported ore now exceeds the make from our Cleveland or home produced ore by 117,693 tons.

Ports.	YEARS.				
	1890.	1891.	1892.	1893.	1894.
	Tons.	Tons.	Tons.	Tons.	Tons.
Hartlepool	147,383	125,769	110,844	90,294	50,989
Middlesbro'	947,440	778,234	886,352	1,269,034	1,316,468
Newcastle	513,493	388,460	241,804	268,389	333,903
Shields	80,024	57,511	85,199	88,633	135,611
Stockton	129,432	148,086	123,243	250,682	193,305
Sunderland	47,271	71,132	74,425	94,005	100,316
Total imports of iron ore	1,865,043	1,569,192	1,521,867	2,061,037	2,130,592
Production of Cleveland Ironstone mines	5,617,573	5,128,303	3,411,400	4,625,520	5,048,966
Make of Cleveland Pig-Iron	1,539,250	1,493,146	957,047	1,388,043	1,422,863
„ Hematite „	1,306,839	1,129,586	980,422	1,336,141	1,540,556
Total make in district	2,846,089	2,622,732	1,937,469	2,724,184	2,963,419

PROSECUTIONS.

The following is a list of the prosecutions reported to me, during the year, under Section 66 of the Coal Mines Regulation Act, 1887.

Name of Mine.	Court and Date of Hearing.	Description of Offence.	Contravention.	Result.	Penalty.	Costs.	Remarks.
					s. d.	s. d.	
Seaham	Seaham Harbour, 12th Jan. 1894.	Working with a broken safety lamp	112 Special Rule	Convicted	20 0	7 0	
Rainton	Houghton, 18th Jan.	Refusing to leave the cage.	105 „ „	„	40 0	56 0	Seven putters.
South Moor	Lanchester, 25th Jan.	Setting fire to hay in mine.	131 „ „	One convicted.	5 0	10 6	One dismissed.
Skelton	Loftus, 23rd Feb.	Firing shot contrary to orders.	67 „ „	Convicted	1 0	7 6	
Seaham	Seaham Harbour, 2nd March.	Hewing coal off side of place.	149 „ „	„	20 0	—	Two convictions.
Holmside	Lanchester, 8th March.	Overworking ponies.	131 „ „	„	30 0	18 0	„ „
Holmside	Lanchester, 8th March.	Trespassing in pit	91 „ „	„	15 0	16 0	„ „
Broompark	Durham, 14th March.	„ „	91 „ „	To pay costs	—	6 6	
Skelton	Guisbro', 3rd April.	Neglecting to sprag tubs.	58 „ „	Dismissed	—	—	
Craghead	Lanchester, 5th April.	Overloading his set of tubs.	131 „ „	Convicted	20 0	9 0	
South Moor	Lanchester, 5th April.	Trespassing in mine.	91 „ „	„	10 0	8 0	
South Moor	Lanchester, 5th April.	Found intoxicated at mine.	122 „ „	„	10 0	8 0	
Littleburn	Durham, 18th April.	Destroying signals	35 „ „	„	40 0	19 0	
Haswell	Castle Eden, 28th April.	Taking pipe into pit.	101 „ „	„	2 6	7 0	
South Moor	Lanchester, 3rd May.	Unramming a shot.	12 General Rule	„	5 0	7 0	
South Moor	Lanchester, 17th May.	Overloading his set of tubs.	131 Special Rule	„	10 0	8 0	
Holmside	Lanchester, 28th June.	Interfering with ventilation.	93 „ „	To pay costs	—	69 0	
South Moor	Lanchester, 26th July.	Damaging safety lamp.	108 „ „	Convicted	5 0	8 0	
South Moor	Lanchester, 26th July.	Taking loose powder into mine.	12 General Rule	„	5 0	7 0	
South Moor	Lanchester, 6th Sept.	Hewing coal off side of place.	131 Special Rule	„	15 0	23 0	Two convictions.
Holmside	Lanchester, 20th Sept.	Unramming missed shot.	12 General Rule	„	10 0	8 0	
Tursdale	Durham, 3rd Oct.	Riding on engine set.	95 Special Rule	„	10 0	16 0	Two convictions.
South Moor	Lanchester, 1st Nov.	Interfering with timbering.	93 „ „	„	5 0	11 0	
Holmside	Lanchester, 15th Nov.	Taking loose powder into mine.	12 General Rule	„	5 0	7 0	
Seaham	Seaham Harbour, 16th Nov.	Taking matches into mine.	101 Special Rule	„	10 0	7 0	
East Howle	Durham, 28th Nov.	Cruelty to pony	98 „ „	„	—	—	One month hard labour.

Complaints from Workmen.

I have received 20 complaints from the workmen during the year, five of them being anonymous, and two copies of workmen's reports have been forwarded by the managers; all had immediate attention, and the defects, if any, were at once remedied.

Exemptions.

The following four exemptions have been granted during the year, under notice, by the Secretary of State, under the Coal Mines Regulation Act, 1887:—

1. An exemption, dated 11th April 1894, X. 46,854, was granted to the Middle Beechburn Coal Company, under section 18 (ii.) (*b*), to enable them to work away the pillars, cutting off the second shaft or outlet in the Seam at their Middle Beechburn Colliery, Crook, county of Durham, so long as not more than 20 persons are employed underground at one time.
2. An exemption, dated 27th August 1894, X. 48,971, was granted to the owner of Red House Colliery, under section 18 (ii.) (*b*), to enable him to work away the pillars, cutting off the second shaft or outlet, in the 5/4 and Main Coal Seams, at his Red House Colliery, Crook, county of Durham, so long as not more than 20 persons are employed underground at one time.
3. An exemption, dated 8th November 1894, X. 49,889, was granted to the owner of North End Colliery, under section 18 (ii.) (*b*), to enable him to work away the pillars, cutting off the second shaft or outlet, in the Brockwell Seam at his North End Colliery, Cockfield, county of Durham, so long as not more than 20 persons are employed underground at one time.
4. An exemption, dated 11th December 1894, X. 50,468, was granted to Messrs. Pease and Partners, Limited, under section 18, (ii.) (*b*), to enable them to work away the pillars, cutting off the second shaft or outlet in the Brockwell Seam at their Bowden Close Colliery, Crook, county of Durham, so long as not more than 20 persons are employed underground at one time.

The following seven exemptions have been granted, during the year, by Her Majesty's Inspector of Mines for the district, under the Coal Mines Regulation Act, 1887:—

1. An exemption, dated the 3rd May 1894, was granted to the South Hetton Coal Company, Limited, for one year, to the use of guides, signals, and a cover overhead, under section 49, General Rules 25 and 27, during the sinking of their No. 2 shaft, at South Hetton Colliery, county of Durham.
2. An exemption, dated the 15th June 1894, was granted to the Charlaw and Sacriston Collieries Company, Limited, for one year, to the use of guides, signals, and a cover overhead, under section 49, General Rules 25 and 27, during the sinking of a shaft, from the surface to the Busty Seam at their Kimblesworth Colliery, county of Durham.
3. An exemption, dated 27th June 1894, was granted to the Framwellgate Coal Company, Limited, for one year, to the use of guides, signals, and a cover overhead, under section 49, General Rules 25 and 27, during the sinking of a shaft, from the surface to the Low Main Seam, at their Cator House Colliery, county of Durham.
4. An exemption, dated the 11th August 1894, was granted to the Hutton Henry Coal Company, Limited, for one year, to the use of guides, signals, and a cover overhead, under section 49, General Rules 25 and 27, during the repairing of their Hartbushes Shaft, county of Durham.
5. An exemption, dated 5th September 1894, was granted to the South Hetton Coal Company, Limited, for one year, to the use of guides, signals, and a cover overhead, under section 49, General Rules 25 and 27, during tho sinking of a balance Staple at their North Pit, at South Hetton, county of Durham.
6. An exemption, dated 5th November 1894, was granted to the Charlaw and Sacriston Collieries Company, Limited, for one year, to the use of guides, signals, and a cover overhead, under section 49, General Rules 25 and 27, during the sinking of the No. 2 Pit, from the Hutton to the Busty Seam, at their Kimblesworth Colliery, county of Durham.
7. An exemption, dated 5th December 1894, was granted to the Consett Iron Company, Limited, for one year, to the use of guides, signals, and a cover overhead, under section 49, General Rules 25 and 27, during the sinking of an air shaft at Stoney Heap for their Eden Pit, at Consett Collieries, county of Durham.

Abandoned Mines.

The following is a list of the plans and sections of abandoned mines or seams which have been forwarded to the Home Office during the year under notice, to be preserved under the care of the Secretary of State, in accordance with section 38 of the Coal Mines Regulation Act, 1887, and with section 14 of the Metalliferous Mines Regulation Act, 1872, after having been examined and compared with the original plan by the inspector of the district and certified to be correct:—

1. B. 15,757. Under the Coal Mines Regulation Act, 1887. Plans and sections of the 5/4, Main Coal, Low Main, and Harvey Seams at Trimdon Colliery, in the parish of Trimdon, in the county of Durham, belonging to the Trimdon Coal Company, Trimdon Grange, R.S.O., which was abandoned on the 13th May 1893 in consequence of the expiration of the lease.
2. B. 15,902. Under the Coal Mines Regulation Act. Plan and section of the Cleveland Main Seam of Ironstone at Lingdale Mines (Little Moorholm Royalty) in the parish of Skelton, in the North Riding of the county of York, belonging to Messrs. Pease and Partners, Limited, Darlington, which was abandoned on the 31st December 1893, being unprofitable to work.
3. B. 16,094. Under the Metalliferous Mines Regulation Act, 1872. Plan and section of the Foul Wood Ironstone Mine, situated near to and in the parish of Stanhope, in Weardale, and in the county of Durham, belonging to the Weardale Iron Company, Limited, Spennymoor, which was abandoned in April 1894 in consequence of being unprofitable to work, the ore being unsuitable for steel making.
4. B. 16,095. Under the Metalliferous Mines Regulation Act. Plan and section of the Middlehope Ironstone Mine, situated near to, and in the parish of Stanhope in Weardale, and in the county of Durham, belonging to the Weardale Iron Company, Limited, Spennymoor, which was abandoned in April 1894 in consequence of being an unprofitable Mine, the ore not being suitable for making steel.
5. B. 16,096. Under the Metalliferous Mines Regulation Act. Plan and section of the Red Vein Ironstone Mine, situated near to and in the parish of Stanhope in Weardale, and in the county of Durham, belonging to the Weardale Iron Company, Limited, Spennymoor, which was abandoned in April 1894 in consequence of being an unprofitable Mine, the ore being unsuitable for steel making.
6. B. 16,147. Under the Coal Mines Regulation Act. Plan and section of the Hutton Seam at Sherburn House Colliery, in the parish of Sherburn House and Whitwell, near to, and in the county of, Durham, belonging to the Right Hon. the Earl of Durham, abandoned in 1894 in consequence of the mineral being exhausted.
7. B. 16,373. Under the Coal Mines Regulation Act. Plan and section of the 5/4 Seam at Castle Eden Colliery, in the parish of Monkhesleden, in the county of Durham, belonging to the Castle Eden Coal Company, Limited, in Liquidation, Hartlepool, abandoned in March 1894 in consequence of the mine being flooded with water.
8. B. 16,373. Under the Coal Mines Regulation Act. Plan and section of the Main Coal Seam at Castle Eden Colliery, in the parish of Monkhesleden, in the county of Durham, belonging to the Castle Eden Coal Company, Limited, in Liquidation, Hartlepool, abandoned in March 1894 in consequence of the mine being flooded with water.
9. B. 16,373. Under the Coal Mines Regulation Act. Plan and section of the Low Main Seam at Castle Eden Colliery, in the parish of Monkhesleden, in the county of Durham, belonging to the Castle Eden Coal Company, Limited, in Liquidation, Hartlepool, abandoned in March 1894 in consequence of the mine being flooded with water.
10. B. 16,373. Under the Coal Mines Regulation Act. Plan and section of the Hutton Seam, at Castle Eden Colliery, in the parish of Monkhesleden, in the county of Durham, belonging to the Castle Eden Coal Company, Limited, in Liquidation, Hartlepool, abandoned in March 1894 in consequence of the mine being flooded with water.
11. B. 16,425. Under the Coal Mines Regulation Act. Plan and section of the 5/4 Seam, at Nettlesworth Colliery, in the parish of Chester-le-Street, in the county of Durham, belonging to the Charlaw and Sacriston Collieries Company, Limited, Newcastle-on-Tyne, abandoned in April 1894 in consequence of the mineral being exhausted.

12. B. 16,425. Under the Coal Mines Regulation Act. Plan and section of the Main Coal Seam at Nettlesworth Colliery, in the parish of Chester-le-Street, in the county of Durham, belonging to the Charlaw and Sacriston Collieries Company, Limited, Newcastle-on-Tyne, abandoned in April 1894 in consequence of the mineral being exhausted.
13. B. 16,425. Under the Coal Mines Regulation Act. Plan and section of Low Main Seam at Nettlesworth Colliery, in the parish of Chester-le-Street, in the county of Durham, belonging to the Charlaw and Sacriston Collieries Company, Limited, Newcastle-on-Tyne, abandoned in April 1894 in consequence of the mineral being exhausted.
14. B. 16,425. Under the Coal Mines Regulation Act. Plan and section of Hutton Seam at Nettlesworth Colliery, in the parish of Chester-le-Street, in the county of Durham, belonging to the Charlaw and Sacriston Collieries Company, Limited, Newcastle-on-Tyne, abandoned in April 1894 in consequence of the mineral being exhausted.
15. B. 16,867. Under the Coal Mines Regulation Act. Plan and section of the Main Coal Seam at East Hetton Colliery, in the parish of Kelloe, in the county of Durham, belonging to Messrs. Walter Scott, Limited, Newcastle-on-Tyne, abandoned on the 22nd of July 1894 in consequence of the mineral being exhausted.
16. B. 16,986. Under the Coal Mines Regulation Act. Plan and section of the 5/4, or Busty, Seam at Tees Hetton Colliery, in the parish of Evenwood in the county of Durham, belonging to the North Beechburn Coal Company, Limited, Witton-le-Wear, abandoned on the 3rd of July 1894. The small quantity of coal left being too costly to work.
17. B. 16,986. Under the Coal Mines Regulation Act. Plan and section of the Brockwell Seam, at Tees Hetton Colliery, in the parish of Evenwood, in the county of Durham, belonging to the North Beechburn Coal Company, Limited, Witton-le-Wear, abandoned on the 3rd of July 1894 in consequence of the mineral being exhausted.
18. B. 17,074. Under the Coal Mines Regulation Act. Plan and section of the 5/4, or Busty, Seam at the Jane Pit of Etherley Colliery, in the parish of Witton-le-Wear, in the county of Durham, belonging to Messrs. Henry Stobart & Co., Limited, of Etherley, abandoned on the 24th of September 1894 in consequence of mineral being exhausted.
19. B. 17,149. Under the Coal Mines Regulation Act. Plan and section of the Constantine Seam at Middle Beechburn Colliery, in the parish of Witton-le-Wear, in the county of Durham, belonging to Mr. Andrew Mein, of Bishop-Auckland, abandoned on the 28th of July 1894 in consequence of the mineral being exhausted.
20. B. 17,149. Under the Coal Mines Regulation Act. Plan and section of the Ballarat Seam at Middle Beechburn Colliery, in the parish of Witton-le-Wear, in the county of Durham, belonging to Mr. Andrew Mein, of Bishop-Auckland, abandoned on the 28th of July 1894 in consequence of the mineral being exhausted.

BOARD FOR EXAMINATIONS.—COLLIERY MANAGERS.

The Board for the appointment of examiners for granting certificates of competency to colliery managers, and under-managers, consists, as formerly, of the following gentlemen, viz. :—

Colliery owners	David Dale, Esq., West Lodge, Darlington. Lindsay Wood, Esq., The Hermitage, Chester-le-Street. J. B. Eminson, Esq., Dene House, Seaham Harbour.
Mining Engineers	A. L. Stevenson, Esq., Holywell Hall, Durham. John Daglish Esq., Rothley, Northumberland. Robt. Robinson, Esq., Howlish Hall, Darlington.
Working miners	Mr. George Parker, Page Bank Colliery, Willington. Mr. Henry Todd, 6, Newcastle Street, Ouston. Mr. John Norman, 1, Reid Terrace, Guisbro'.
Her Majesty's Inspector of Mines	Thomas Bell, Esq., Durham.
Secretary	G. W. Bartlett, Esq., Red Hall, Darlington.

The ordinary board meeting was held, as before, in the Coal Trade Hall, Newcastle-on-Tyne, on the 5th May last, to appoint a time and place to hold the examination, to consider and define qualifications of candidates, and transact other formal business.

The examiners appointed were Mr. A. L. Steavenson and Mr. Thomas Lishman, mining engineers, and Mr. John Forman.

The examination was held in the large hall of the Mechanics' Institute, at Darlington, on the 18th and 19th days of July, when 13 candidates presented themselves for first class, and 65 for second class certificates.

The Board met again in Newcastle on the 15th of December to receive the report of the examiners, which was considered satisfactory.

The following table gives a summary of the gross number of candidates who have presented themselves for examination during the continuance of the 1872 Coal Mines Regulation Act, showing the number who satisfied the examiners and received certificates of the first class; and also the number of candidates who have presented themselves each year since the commencement of the 1887 Act, and have received certificates distinguishing those of the first from the second class.

Date of Examination.	First Class.		Second Class.	
	Attended.	Passed.	Attended.	Passed.
Under the 1872 Act. 15 years - - -	371	236	—	—
1888. July 30th and 31st (under the 1887 Act) -	10	5	82	59
1889. July 22nd and 23rd (ditto) -	8	5	75	47
1890. July 22nd and 23rd (ditto) -	9	6	118	64
1891. July 21st and 22nd (ditto) -	12	7	56	34
1892. July 26th and 27th (ditto) -	13	5	43	12
1893. July 26th and 27th (ditto) -	9	5	47	20
1894. July 18th and 19th (ditto) -	13	5	65	25

The regulations of the Board for examinations under the Coal Mines Regulation Act, 1887, are as follows:—

BOARDS FOR EXAMINATIONS.

Coal Mines Regulation Act, 1887.

"SCHEDULE II."

Table of Maximum Fees to be paid in respect of Certificates.

First Class Certificates.

By an applicant for examination - - Two pounds.
For copy of certificate - - - Five shillings.

Second Class Certificate.

By an applicant for examination - - One pound.
For copy of certificate - - - Two shillings and sixpence.

Any person desirous of being examined must make an application to the Secretary of State, in the form hereunder set forth, enclosing therein a Post Office Order, or postal note, for the fee of 2*l.* or 1*l.*, as the case may be, in favour of Carey J. Knyvett, Esquire, C.B., Home Office, Whitehall, London, made payable at the General Post Office. The applicant will then receive from the Home Office an authority to present himself for examination before the examiners appointed for the district.

FORM OF APPLICATION FOR EXAMINATION.

Date ____________________

Full postal address ____________________

SIR,

I BEG to inform you that I am desirous of presenting myself to be examined by the Examiners for the district of for a class Certificate of Competency as of a mine, and I enclose a Post Office Order for the sum of £ .

I am, Sir,
Your obedient Servant,
____

To the Right Hon. the Secretary of State
for the Home Department.

To be accompanied by statements, on paper of foolscap :—

1. Name and address in full of applicant for (first or second class certificate). 1.

2. Name of the district in which the applicant wishes to be examined. 2.

CERTIFICATES OF SERVICE.

Any person who satisfies the Secretary of State either that before the passing of the Act (16th September 1887) he was exercising, and has since that date exercised, or that he has at any time within five years before the passing of the Act, for a period of not less than 12 months, exercised functions substantially corresponding to those of an under-manager in a mine, is entitled to a certificate of service, which shall have the same effect, for the purposes of the Act, as a second-class certificate of competency granted under the Act (section 80).

The fee to be paid by an applicant for a certificate of service is 5*s*.

Forms of application, containing full directions and particulars, will be supplied to applicants by the Home Office on request being made by a letter as follows :—

SIR,

I BEG to apply for a form of application for a Certificate of Service as under-manager of a mine.

I am, Sir,
Your obedient servant,
____

To the Right Hon. the Secretary of State
for the Home Department.

ORDER FIXING FEES FOR COPIES OF CERTIFICATES.

COAL MINES REGULATION ACT, 1887.

I, the Right Hon. Henry Matthews, one of Her Majesty's Principal Secretaries of State, in pursuance of the power vested in me by section 30 and Schedule II. of the Coal Mines Regulation Act, 1887 (50 & 51 Victoria, chapter 58) do hereby direct that the sum of five shillings shall be the fee to be paid in respect of a certified copy of a first class certificate of competency or of a certificate of service as manager of a mine under the said Act.

Also that the sum of two shillings and sixpence shall be the fee to be paid in respect of the issue of a certified copy of a second class certificate, whether of competency or of service as under-manager of a mine under the said Act.

Given under my hand, at Whitehall, this 19th day of November 1888.

HENRY MATTHEWS,
One of Her Majesty's Principal
Secretaries of State.

It will be necessary for each candidate before his examination can be proceeded with to produce to the Examiners—

1. The authorisation from the Secretary of State to appear for examination.
2. The prescribed evidence as to character, consisting of—
   a. A statement of the situation he has filled during the past five years, to which a declaration must be appended that all the allegations are true, such declaration being signed by him in the presence of one witness.
   b. Testimonials from two persons (whose addresses must be given) as to his sobriety, experience, ability, and general good conduct.
3. Satisfactory evidence that he has not had less than five years' practical experience in a mine.

Candidates appearing a second time must produce fresh evidence of their sobriety, experience, and general good conduct.

Candidates must give notice to the Secretary of the Board of their intention to present themselves for examination, and stating for which class of certificate they wish to be examined.

STATEMENT SHOWING THE AGE AND EXPERIENCE REQUIRED AND SUBJECTS FOR EXAMINATIONS OF CANDIDATES FOR FIRST AND SECOND CLASS CERTIFICATES OF COMPETENCY, IN THIS DISTRICT, FOR THE YEAR 1894.

No. 4. DURHAM DISTRICT.

The candidate must be 21 years of age or upwards.

FOR FIRST CLASS CERTIFICATES :—

Actual practical experience for at least five years as under viewer, assistant viewer, fore overman, back overman, master wasteman, or master shifter ; but at least two years' actual experience in any of these capacities will be deemed sufficient in the case of a candidate who during such two years has held a second class certificate.

Two years' or three years' apprenticeship under Indenture to a mining engineer, with evidence that such period afforded substantially practical experience in a mine, shall be regarded as a substitute for an equivalent period of such employment.

FOR SECOND CLASS CERTIFICATES :—

Practical experience in a mine for at least five years, which shall include, in addition to the foregoing employments, deputy overman, or practical working miner.

FOR FIRST CLASS CERTIFICATES :—

1. Writing and arithmetic.
2. Nature and properties of gases, such as giving a description of the characteristics of those met with in mines, how their presence can be ascertained, and what precautions should be taken to prevent their accumulation, or removal, if they do accumulate. How the quantity of air in any air-way can be ascertained.
3. General engineering principles, including surveying and strength of materials, properties of steam and water.
4. Practical mining, including principles of ventilation, sinking, working, timbering, bratticing, boring on approaching old workings, also machinery and boilers in general use at collieries.
5. The "General Rules" of the "Coal Mines Regulation Act, 1887," the "Special Rules" of this Board's mining district, the "Explosives Act," the "Boiler Explosions Acts, 1882 and 1890," and some knowledge of ambulance work.
6. Geology, especially in the mining district of this Board.

FOR SECOND CLASS CERTIFICATES :—

The same subjects as above so far as they are necessary for practical working miners.

Attached to this report will be found Schedules A. to H., showing respectively the annual mortality caused by accidents at the mines in the United Kingom of Great Britain and Ireland, under the Coal Mines Regulation Acts, 1872 and 1887, to the persons employed above and below ground, during the 22 years, 1873 to 1894 inclusive, together with the death rate per 1,000 persons employed, the gross tons of mineral wrought; the number of tons raised per life lost; the output per person employed, and the number of mines; the same information during the same period, with respect to accidents &c., in the Durham Inspection District; the number of fatal accidents and lives lost at both Coal and Ironstone Mines, with a comparison for the previous five years. Detailed tables are given of the deaths that have taken place at the mines under both Acts, together with a list of deaths that have taken place on private branch railways and tramways, and in washing and coking coal on premises adjacent to or belonging to the mines. These are now included in the summaries.

There will also be found a list of deaths that have occurred, in and about the mines, of persons who were employed, and some whose deaths were found on investigation not to be due to accidents comprised within the meaning of the Mining Acts, and a corrected list of the names of mines, owners, and postal addresses, the names of the managers and under managers, and number and class of their certificates, dates of signature of Special Rules together with the description and quality of mineral worked at each mine.

I have, &c.
(Signed) THOMAS BELL,
H.M. Inspector of Mines.

To the Right Honourable
H. H. Asquith, Q.C., M.P.,
Secretary of State, Home Department,
Whitehall, S.W.

SCHEDULE A.

TABLE showing the ANNUAL MORTALITY caused by ACCIDENTS at the MINES in the UNITED KINGDOM OF GREAT BRITAIN AND IRELAND, under the Coal Mines Regulation Acts, 1872 and 1887, to the PERSONS employed ABOVE and BELOW GROUND, during the past 22 YEARS, 1873 to 1894 inclusive, together with the Death-rate per 1,000 Persons employed; the Gross Tons of Mineral wrought; the Number of Tons raised per Life lost; the Out-put per Person employed; and the Number of Mines.

COMPILED FROM OFFICIAL RETURNS.

Year.	Number of Persons employed.			Number of Deaths, and Death-rate per 1,000 Persons employed Below Ground and Above Ground.														Gross Tons of Mineral Wrought.			Number of Mines.
	Below Ground.	Above Ground.	Total.	From Explosions of Firedamp.		From Falls in the Mine.		In Shafts.		Miscellaneous Accidents Below Ground.		Total Below Ground.		Total Above Ground.		Gross Total Below Ground and Above Ground.		Gross Statute Tons.	Tons of Mineral Wrought.		
				Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.		Per Life Lost.	Per Person employed.	
																			Above and Below Ground.		
1873	407,808	106,341	514,149	100	·245	491	1·204	171	·419	221	·542	983	2·410	86	·808	1,069	2·079	143,041,246	133,677	278	3,938
1874	428,611	110,218	538,829	166	·387	413	·964	154	·359	214	·499	947	2·209	109	·988	1,056	1·959	140,713,832	133,251	261	4,332
1875	427,017	108,828	535,845	288	·674	458	1·072	172	·402	227	·531	1,145	2·679	99	·918	1,244	2·321	147,700,313	118,730	275	4,501
1876	409,229	105,303	514,532	95	·232	449	1·097	129	·315	149	·364	822	2·008	111	1·053	933	1·813	148,989,385	159,688	290	4,385
1877	395,025	99,366	494,391	345	·873	448	1·135	129	·326	187	·473	1,109	2·807	99	·990	1,208	2·443	148,846,260	123,217	301	4,231
1878	382,979	92,350	475,329	586	1·531	469	1·222	111	·289	161	·420	1,327	3·462	86	·931	1,413	2·972	145,798,138	103,183	307	3,968
1879	385,179	91,631	476,810	184	·477	426	1·105	120	·311	172	·446	902	2·339	71	·774	973	2·040	145,366,369	149,100	305	3,956
1880	391,381	93,552	484,933	499	1·275	462	1·180	91	·232	178	·455	1,230	3·142	88	·940	1,318	2·718	161,466,793	122,509	333	3,904
1881	399,387	96,090	495,477	116	·290	450	1·127	110	·275	190	·476	866	2·168	88	·811	954	1·925	168,959,931	177,106	341	3,847
1882	406,192	97,795	503,987	250	·615	468	1·152	116	·286	208	·512	1,042	2·565	84	·958	1,126	2·234	171,334,032	152,161	339	3,814
Totals, &c. for 10 years	4,032,808	1,001,474	5,034,282	2,629	·652	4,534	1·124	1,303	·323	1,907	·473	10,373	2·572	921	·919	11,294	2·243	1,522,216,299	133,099	302	4,088
1883	416,696	98,237	514,933	134	·322	469	1·125	97	·233	246	·590	946	2·270	108	1·099	1,054	2·046	178,763,390	169,605	347	3,707
1884	422,233	98,143	520,376	65	·154	482	1·142	88	·208	213	·504	848	2·008	94	·956	942	1·810	174,872,759	185,639	336	3,554
1885	424,191	96,441	520,632	341	·803	439	1·034	76	·179	219	·518	1,075	2·534	75	·982	1,150	2·207	173,223,960	150,629	332	3,488
1886	423,862	96,108	519,970	129	·304	461	1·087	86	·203	188	·444	864	2·038	89	·821	953	1·833	170,006,959	178,391	327	3,391
1887	428,540	97,737	526,277	149	·347	470	1·097	84	·196	213	·497	916	2·137	79	·808	995	1·890	173,049,795	173,919	328	3,382
1888	438,902	96,043	534,945	49	·111	471	1·073	75	·171	209	·476	804	1·831	84	·874	888	1·660	182,660,163	205,698	341	3,354
1889	463,600	100,135	563,735	138	·297	465	1·003	74	·157	292	·629	969	2·086	95	·848	1,064	1·887	189,633,656	178,227	336	3,389
1890	506,812	106,421	613,233	290	·572	434	·856	88	·174	245	·483	1,057	2·085	103	·967	1,160	1·891	194,605,887	167,763	317	3,409
1891	536,091	112,359	648,450	51	·095	476	·888	119	·222	236	·440	882	1·645	97	·862	979	1·510	197,693,592	201,934	304	3,430
1892	549,312	114,988	664,300	123	·225	435	·791	91	·165	255	·464	904	1·645	78	·678	982	1·478	191,954,908	195,473	289	3,403
Totals, &c. for 10 years	4,610,239	1,016,612	5,626,851	1,469	·318	4,602	·998	878	·190	2,316	·503	9,265	2·009	902	·886	10,167	1·985	1,826,465,069	179,646	324	3,451
*1893	549,738	132,435	682,173	160	·287	412	·749	103	·187	265	·486	940	1·709	120	·900	1,060	1·552	175,236,857	168,148	257	3,383
1894	569,678	135,562	705,240	317	·556	444	·779	77	·135	177	·311	1,015	1·782	112	·826	1,127	1·598	199,451,018	176,975	283	3,419

* The persons employed on private branch railways and tramways, and in washing and coking coal on premises adjacent to or belonging to the mines (but which do not come under the Act) are included in these figures this year for the first time.

SCHEDULE B.

TABLE showing the ANNUAL MORTALITY caused by ACCIDENTS at the MINES in DURHAM INSPECTION DISTRICT (No. 4), comprising the Southern Portion of the County of Durham, the County of Westmoreland, and the North Riding (Cleveland) of the County of York, under the Coal Mines Regulation Acts, 1872 and 1887, to the PERSONS employed ABOVE and BELOW GROUND, during the past 22 YEARS, 1873 to 1894 inclusive, together with the Death rate per 1,000 Persons employed; the Gross Tons of Mineral wrought; the Number of Tons raised per Life lost; the Out-put per Person employed; and the Number of Mines.

COMPILED FROM OFFICIAL RETURNS.

Year.	Number of Persons employed.			Number of Deaths, and Death-rate per 1,000 Persons employed Below Ground and Above Ground.														Gross Tons of Mineral Wrought.			Number of Mines.
	Below Ground.	Above Ground.	Total.	From Explosions of Firedamp.		From Falls in the Mine.		In Shafts.		Miscellaneous Accidents Below Ground.		Total Below Ground.		Total Above Ground.		Gross Total Below Ground and Above Ground.		Gross Statute Tons.	Tons of Mineral Wrought. (Above and Below Ground.)		
				Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.	Total Deaths.	Deaths per 1,000.		Per Life Lost.	Per Person Employed.	
1873	49,225	13,482	62,707	1	·020	43	·874	10	·203	36	·731	90	1·828	11	·816	101	1·610	23,336,621	231,054	372	215
1874	52,543	12,998	65,541	2	·038	31	·590	14	·266	32	·609	79	1·503	17	1·309	96	1·465	23,844,628	248,381	363	218
1875	54,528	13,855	68,383	1	·019	48	·880	13	·237	29	·532	91	1·668	14	1·010	105	1·535	25,982,039	247,543	379	257
1876	54,175	14,056	68,231	6	·111	49	·905	5	·092	18	·332	78	1·440	16	1·138	94	1·377	26,493,819	281,849	388	258
1877	51,999	13,015	65,014	2	·038	47	·904	12	·231	33	·635	94	1·808	22	1·690	116	1·784	26,147,523	225,409	402	256
1878	48,449	11,248	59,697	4	·083	44	·908	7	·144	34	·702	89	1·837	11	·978	100	1·675	24,168,785	241,688	404	263
1879	45,779	10,955	56,734	—	—	38	·830	7	·153	22	·480	67	1·463	4	·365	71	1·075	22,049,725	310,560	388	261
1880	49,329	11,883	61,212	164	3·323	43	·872	8	·162	33	·670	248	5·027	12	1·014	260	4·248	27,787,790	106,876	454	267
1881	50,433	12,514	62,947	—	—	47	·932	13	·258	34	·674	94	1·864	16	1·279	110	1·748	28,299,554	257,268	449	258
1882	51,075	12,914	63,989	127	2·486	45	·881	4	·079	26	·509	202	3·955	9	·696	211	3·298	28,501,855	135,080	445	257
Totals, &c. for 10 years	507,535	126,920	634,455	307	·606	435	·857	93	·183	297	·586	1,132	2·232	132	1·039	1,264	1·992	256,612,389	203,016	404	251
1883	52,091	13,229	65,320	—	—	47	·903	3	·057	37	·710	87	1·670	8	·604	95	1·454	29,273,055	308,137	448	258
1884	50,592	13,033	63,625	—	—	41	·811	6	·118	26	·514	73	1·443	13	·997	86	1·351	27,244,133	316,792	431	223
1885	50,038	12,446	62,484	—	—	39	·779	7	·140	36	·719	82	1·638	6	·482	88	1·409	26,555,736	301,770	425	230
1886	48,480	12,423	60,903	28	·577	45	·928	1	·021	18	·371	92	1·897	8	·644	100	1·642	25,716,811	257,168	424	226
1887	48,758	12,465	61,223	—	—	42	·861	4	·082	39	·800	85	1·743	8	·642	93	1·519	26,207,933	281,805	428	222
1888	50,137	12,285	62,422	—	—	47	·937	2	·040	32	·638	81	1·615	8	·651	89	1·425	27,130,925	304,842	434	238
1889	52,354	12,851	65,205	—	—	44	·840	5	·095	27	·516	76	1·451	12	·934	88	1·350	27,906,382	317,118	428	223
1890	55,672	13,526	69,198	—	—	38	·683	3	·053	22	·395	63	1·131	4	·295	67	·968	28,132,018	419,880	406	223
1891	57,994	14,278	72,272	—	—	46	·793	7	·120	23	·397	76	1·310	7	·490	83	1·148	26,892,804	324,010	372	225
1892	56,818	13,880	70,698	—	—	32	·562	4	·070	14	·248	50	·880	4	·288	54	·763	20,555,606	380,659	291	228
Totals, &c. for 10 years	522,934	130,416	653,350	28	·054	421	·805	42	·080	274	·524	765	1·463	78	·598	843	1·290	265,615,403	315,083	406	230
*1893	57,671	18,762	76,433	2	·034	39	·676	9	·157	22	·381	72	1·248	8	·426	80	1·046	26,729,828	334,120	349	229
1894	60,157	18,924	79,081	2	·033	40	·665	6	·099	29	·482	77	1·279	12	·634	89	1·125	28,219,304	317,071	356	238

* The persons employed on private branch railways and tramways, and in washing and coking coal on premises adjacent to or belonging to the mines (but which do not come under the Act) are included in these figures this year for the first time.

SCHEDULE C.

The following are the usual Tables given in these Reports showing the number of fatal accidents, and deaths resulting therefrom, for the year under notice, in the two portions of the district under the Coal Mines Regulation Act, and showing the average for the five preceding years:—

Coal Mines.	Number of separate Fatal Accidents. Years and Averages.							Number of Deaths resulting. Years and Averages.						
	1889.	1890.	1891.	1892.	1893.	Average of Five Years.	1894.	1889.	1890.	1891.	1892.	1893.	Average of Five Years.	1894.
Explosions of Fire-damp	—	—	—	—	2	·4	2	—	—	—	—	2	·4	2
Falls in Mine.														
Falls of sides	5	3	3	3	8	4·4	5	5	3	3	3	8	4·4	5
Falls of roof	33	27	33	22	25	28·0	29	34	27	34	23	26	28·8	29
Total falls in mine	38	30	36	25	33	32·4	34	39	30	37	26	34	33·2	34
In Shafts.														
Overwinding	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ropes and chains breaking	—	—	—	—	1	·2	—	—	—	—	—	4	·8	—
Whilst ascending or descending by machinery	1	1	1	—	2	1·0	1	2	1	1	—	2	1·2	2
Falling into shaft from surface	1	—	—	2	—	·6	—	1	—	—	2	—	·6	—
Things falling from surface	—	—	1	—	—	·2	—	—	—	2	—	—	·4	—
Falling from part way down	1	1	1	2	1	1·2	3	1	1	1	2	1	1·2	3
Things falling from part way down	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Miscellaneous in shafts	1	1	3	—	2	1·4	1	1	1	3	—	2	1·4	1
Total in shafts	4	3	6	4	6	4·6	5	5	3	7	4	9	5·6	6
Miscellaneous Underground.														
Explosions of gunpowder, &c.	3	3	—	2	1	1·8	—	3	3	—	2	1	1·8	—
Suffocation by gases	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Irruptions of water	—	1	—	—	—	·2	—	—	1	—	—	—	·2	—
Falling into water	—	—	—	—	—	—	—	—	—	—	—	—	—	—
On incline and engine planes	6	6	8	4	3	5·4	6	6	6	8	4	3	5·4	6
By trams and tubs	10	11	6	3	13	8·6	16	10	11	6	3	13	8·6	16
By machinery underground	1	—	2	—	—	·6	1	1	—	2	—	—	·6	1
Sundries underground	7	1	3	2	1	2·8	2	7	1	3	2	1	2·8	2
Total miscellaneous underground	27	22	19	11	18	19·4	25	27	22	19	11	18	19·4	25
Total underground	69	55	61	40	59	56·8	66	71	55	63	41	63	58·6	67
On Surface.														
By machinery on surface	—	—	—	1	1	·4	—	—	—	—	1	1	·4	—
By boilers bursting	1	—	—	—	—	·2	—	1	—	—	—	—	·2	—
Railways and tramways	5	—	2	2	1	2·0	8	5	—	2	2	1	2·0	8
Miscellaneous on surface	4	3	5	1	2	3·0	2	6	3	5	1	2	3·4	2
Total on surface	10	3	7	4	4	5·6	10*	12	3	7	4	4	6·0	10*
Gross Totals	79	58	68	44	63	62·4	76	83	58	70	45	67	64·6	77

* Two accidents, causing two deaths, occurred during 1894 on private branch railways, at the coal mines, and are here included. This is the first year these accidents have been given in this Schedule.

SCHEDULE D.

A similar table to the foregoing, giving details as to the Cleveland portion of the district:—

Ironstone Mines.	Number of separate Fatal Accidents. Years and Averages.							Number of Deaths resulting. Years and Averages.						
	1889.	1890.	1891.	1892.	1893.	Average of Five Years.	1894.	1889.	1890.	1891.	1892.	1893.	Average of Five Years.	1894.
EXPLOSIONS OF FIRE-DAMP	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FALLS IN MINE.														
Falls of sides	2	3	3	4	2	2·8	1	2	3	3	4	2	2·8	1
Falls of roof	3	5	6	2	3	3·8	5	3	5	6	2	3	3·8	5
Total falls in mine	5	8	9	6	5	6·6	6	5	8	9	6	5	6·6	6
IN SHAFTS.														
Overwinding	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ropes and chains breaking	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Whilst ascending or descending by machinery.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Falling into shaft from surface	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Things falling from surface	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Falling from part way down	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Things falling from part way down	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Miscellaneous in shafts	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total in shafts	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MISCELLANEOUS UNDERGROUND.														
Explosions of gunpowder, &c.	—	—	2	1	2	1·0	1	—	—	2	1	2	1·0	1
Suffocation by gases	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Irruptions of water	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Falling into water	—	—	—	—	—	—	—	—	—	—	—	—	—	—
On incline and engine planes	—	—	1	1	2	·8	—	—	—	1	1	2	·8	—
By trams and tubs	—	—	1	—	—	·2	—	—	—	1	—	—	·2	—
By machinery underground	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sundries underground	—	—	—	1	—	·2	3	—	—	—	1	—	·2	3
Total miscellaneous underground	—	—	4	3	4	2·2	4	—	—	4	3	4	2·2	4
Total underground	5	8	13	9	9	8·8	10	5	8	13	9	9	8·8	10
ON SURFACE.														
By machinery on surface	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By boilers bursting	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Railways and tramways	—	—	—	—	—	—	1	—	—	—	—	—	—	1
Miscellaneous on surface	—	1	—	—	—	·2	1	—	1	—	—	—	·2	1
Total on surface	—	1	—	—	—	·2	2*	—	1	—	—	—	·2	2*
GROSS TOTALS	5	9	13	9	9	9·0	12	5	9	13	9	9	9·0	12

* One accident causing one death occurred during 1894 on a private tramway, and is here included. This is the first year these accidents have been given in this Schedule.

SCHEDULE E.

MINES CLASSED UNDER THE COAL MINES REGULATION ACT, 1887.

List of the FATAL ACCIDENTS, and DEATHS arising therefrom within One Year and a Day from the Date of the ACCIDENTS in MR. BELL'S DISTRICT, comprising SOUTH DURHAM, WESTMORELAND, and the NORTH RIDING of the COUNTY of YORK, during the Year 1894.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost.					
										Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1	1894. Jan. 3 1.45 p.m.	7	East Howle -	Ferry Hill -	Carlton Iron Co., Limited.	Benj. Barber -	13	Coupler -	Run over by set of tubs, but it is not known how he became entangled with them.	–	–	–	1	–	1
2	Jan. 4 3 p.m.	6	East Hetton -	Coxhoe -	Walter Scott, Limited	Thomas Weldon -	40	Hewer -	Crushed by fall of stone. Died on 10th instant.	–	1	–	–	–	1
3	Jan. 9 1.30 p.m.	3	Etherley -	Auckland -	Henry Stobart & Co. -	Thomas Oxley -	31	Ditto -	Died to day from injuries received to spine and ribs, caused by a fall of coal on 9th September 1893.	–	1	–	–	–	1
4	Jan. 10 8 p.m.	1	Holmside -	Chester-le-Street	Thos. Hedley and Brothers.	William Old -	37	Stoneman -	Fall of side stone while timbering a gateway.	–	1	–	–	–	1
5	Jan. 15 9 a.m.	3	South Moor -	Ditto -	South Moor Coal Co., Limited.	Frederick Langdon	14	Driver -	The pony stumbled and threw the tub aside, and he fell off the tub head and was crushed to death.	–	–	–	1	–	1
6	Jan. 20 8.50 a.m.	5	Cornsay -	Lanchester -	Ferens and Love -	David Smith -	38	Hewer -	Died in hospital to-day from injuries received to spine by fall of stone on the 28th December last.	–	1	–	–	–	1
7	Jan. 23 5.45 p.m.	2	Murton -	Sunderland -	South Hetton Coal Co., Limited.	Thomas Byers -	34	Timber drawer.	Fall of stone while drawing a jud.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
8	1894. Feb. 13 1.30 p.m.	5	Brancepeth -	Willington -	Strakers and Love -	Henry Gray -	29	Hewer -	Fall of stone, in a lift, from a slip; the fracture was caused by the working of a previous lift, and the fall was quite unexpected.	–	1	–	–	–	1
9	Feb. 19 8.40 p.m.	3	South Hetton	Sunderland -	South Hetton Coal Co., Limited.	James McCaughey	16	Driver -	Crushed by tubs and neck dislocated. He was coming down an incline without drags.	–	–	–	1	–	1
10	Feb. 21 9.30 a.m.	5	WingateGrange	Wingate -	Owners of Wingate Grange Colliery.	Charles Truscott -	36	Hewer -	Right thigh fractured and face and head cut, caused by a fall of stone. Died 13th March.	–	1	–	–	–	1
11	Feb. 26 10.30 a.m.	1	Hutton Henry	Ditto -	Hutton Henry Coal Co., Limited.	Thomas Woodhouse	36	Ditto -	Broken collar-bone and injury to chest by fall of coal while kirving his jud. Died on 27th instant. He had neglected to use sprags.	–	1	–	–	–	1
12	Feb. 27 11.50 a.m.	6	South Durham	Auckland -	South Durham Coal Co., Limited.	Thomas Thompson	16	Driver -	He was waiting for another driver, and thinking the pony was coming too quickly he flashed his light which made the pony cross out and he was knocked under the tubs. Died March 13th.	–	–	–	1	–	1
13	Feb. 28 8.35 a.m.	3	South Hetton	Sunderland -	South Hetton Coal Co., Limited.	Richard Catherine	63	Wagon wright	While crossing the branches with some timber he was run over by a locomotive engine.	–	–	–	–	1	1
14	Mar. 2 4.15 p.m.	10	South Moor -	Chester - le - Street.	South Moor Coal Co., Limited.	John Barron - William Neal -	35 16	Rolleywayman Driver -	Fall of a large stone from side of shaft on to the cage in which they were ascending.	–	–	2	–	–	2

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost: Explosions of Fire-damp.	Lives lost: Falls of Roof and Sides.	Lives lost: In Shafts.	Lives lost: Miscellaneous Underground.	Lives lost: Above Ground.	Lives lost: Total.
15	1894. Mar. 6 2.20 p.m.	8	Black Boy -	Auckland -	Bolckow, Vaughan, & Co., Limited.	Matt. Staveley -	16	Incline boy	Severely crushed by set running a main. Died on the 12th.	–	–	–	1	–	1
16	Mar. 13 9.30 a.m.	4	Edmondsley -	Chester-le-Street	Edmondsley Coal Co. -	Roger Hardy -	13	Driver -	Injury to head. Fell off his tubs and was run over.	–	–	–	1	–	1
17	Mar. 14 12 p.m.	2	Seaham -	Sunderland -	Marquess of Londonderry.	Thos. Dixon -	55	Horsekeeper	Sprained by lifting tub on to way, afterwards worked and was then sent to hospital, but died from inflammation of the spinal cord on the 26th July.	–	–	–	1	–	1
18	Mar. 15 7 p.m.	2	Norwood -	Evenwood -	Norwood Coal Co. -	Geo. Wm. Richardson.	18	Putter -	Head badly crushed between a tub and a prop by pony starting too soon. Died on 21st.	–	–	–	1	–	1
19	Mar. 20 11 a.m.	5	Ryhope -	Sunderland -	Ryhope Coal Co., Limited.	Thos. Cannon -	16	Tub coupler	Head jammed between a tub and a balk in shaft siding.	–	–	–	1	–	1
20	Mar. 22 7 a.m.	3	Bearpark -	Durham -	Bearpark Coal Co., Limited.	Robt. Wynne -	30	Hewer -	Fall of roof while attending his work.	–	1	–	–	–	1
21	Apr. 7 7.30 a.m.	5	North Bitchburn.	Crook - -	North Bitchburn Coal Co., Limited.	John Emmerson -	35	Ditto -	Severe injuries to body by fall of stone. Died on the 9th.	–	1	–	–	–	1
22	Apr. 12 8 a.m.	2	South Pelaw -	Chester-le-Street	South Pelaw Coal Co.	John Richardson -	17	Putter -	Side severely crushed between tub and prop. Died on the 13th.	–	–	–	1	–	1
23	Apr. 27 1.0 p.m.	4	Brancepeth -	Willington -	Strakers and Love -	Mark Harland -	25	Hewer -	Severe injuries to leg and back by fall of stone from breaker in broken jud just holed into goaf. Died in hospital on the 15th May.	–	1	–	–	–	1

List of Fatal Accidents—*continued*.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
24	1894. Apr. 30 10.10a.m.	5	North Bitchburn.	Crook - -	North Bitchburn Coal Co., Limited.	Ovington Hall -	18	Putter -	Severely injured by a fall of roof from a slip while engaged hewing coal, causing his death in a few hours.	–	1	–	–	–	1
25	May 11 5.0 p.m.	7	Ryhope - -	Sunderland -	Ryhope Coal Co., Limited.	John Anderson Johnson.	30	Hewer -	Injury to spine by the engine set getting off way and catching him.	–	–	–	1	–	1
26	May 18 9.0 a.m.	5	Newbottle D.	Fence Houses -	Earl of Durham -	James C. Murtagh	25	Ditto -	Fall of stone from a slip in the face of a broken jud.	–	1	–	–	–	1
27	May 25 1.0 p.m.	7	Hutton Henry	Wingate -	Hutton Henry Coal Co., Limited.	Mark Pender -	18	Banksman -	Severe sprain causing rupture, while pushing a tub into tippler, resulting in his death on the 6th June.	–	–	–	–	1	1
28	May 29 9.50 a.m.	4	North Biddick	Washington -	Earl of Durham -	John Kinross -	26	Ditto -	Descending from the surface to the "hole" he stepped out of the cage too soon and fell down the shaft.	–	–	1	–	–	1
29	May 29 10.30a.m.	1	South Pontop	Annfield Plain -	U. A. Ritson - -	Wm. Geo. Armstrong.	19	Hewer -	While passing a putter he slipped and fell and his head was crushed between a full tub and a prop.	–	–	–	1	–	1
30	May 30 10.45a.m.	2	Shildon Lodge	Auckland -	Bolckow, Vaughan, & Co., Limited.	George Chaytor -	37	Ditto -	Fall of a mass of coal while turning away a loose end place next to goaf.	–	1	–	–	–	1
31	June 1 8.45 a.m.	4	Sacriston -	Durham -	Charlaw and Sacriston Collieries Co., Limited.	Thos. Renwick -	19	Wagonman	While lowering wagons down to the screens his foot got fast in a crossing and he was run over.	–	–	–	–	1	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
32	1894. June 1 2.30 p.m.	9	Evenwood	Evenwood	North Bitchburn Coal Co., Limited.	William Mason	14	Driver	Head crushed between tub and roof while coming out-bye and riding on the limbers.	–	–	–	1	–	1
33	June 2 1.0 a.m.	6	Houghton	Fence Houses	Earl of Durham	John Williams	41	Timber drawer.	Sudden fall of stone while drawing timber out of a broken jud.	–	1	–	–	–	1
34	June 12 11.0 a.m.	7	East Hetton	Coxhoe	Walter Scott, Limited	Thomas Kane	50	Hewer	Crushed between cage and frame when getting into cage, which was taken away in consequence of a mistake in the electric signals.	–	–	1	–	–	1
35	June 25 2.0 p.m.	5	Brandon	Durham	Strakers and Love	Ralph Maughan	32	Ditto	Fall of stone in an old bord where he had gone to be out of the way of his own broken jud falling on him.	–	1	–	–	–	1
36	July 3 8.20 a.m.	9	Oakenshaw	Willington	Ditto	Joseph Manners	16	Wagon greaser.	Riding on a wagon, where he had no business to be, he fell off and was run over.	–	–	–	1	–	1
37	July 7 12.5 a.m.	2	Whitworth	Spennymoor	T. M. Reay	Henry Gibbon	59	Overman	Hand injured by shovel, and he was afterwards working amongst some bad water which caused blood poisoning, and he died on the 15th instant.	–	–	–	1	–	1
38	July 10 8.30 a.m.	5	Brancepeth	Willington	Strakers and Love	Pat McGee	20	Hewer	Severe injury to spine by fall of stone in his working place. Died in the hospital on the 6th August.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous Underground.	Lives lost. Above Ground.	Lives lost. Total.
39	1894. July 11 9.30 p.m.	6	Ryhope	Sunderland	Ryhope Coal Co., Limited.	Thos. Hutchinson	52	Hewer	He refused to leave his place when told by the deputy that it was unsafe, and a heavy fall of top coal took place.	–	1	–	–	–	1
40	July 12 10.0 p.m.	6	Silksworth	Ditto	Marquess of Londonderry.	Michael Martin	57	Ditto	Fall of a large stone from a slip in a broken jud.	–	1	–	–	–	1
41	July 17 2.0 p.m.	1	Seaham	Ditto	Ditto	Edward Henderson	24	Rolleywayman.	Concussion of brain caused by striking his head against an insulator when going in-bye. Died on the 7th August.	–	–	–	1	–	1
42	July 18 2.0 p.m.	8	Murton	Ditto	South Hetton Coal Co., Limited.	Henry Milburn	59	Hewer	Injury to hip, struck by drag in wagon while it was passing him. Died on the 24th.	–	–	–	–	1	1
43	July 20 12.15 p.m.	3	Charlaw	Sacriston	Charlaw and Sacriston Collieries Co., Limited.	John Greener	39	Screenman	Fall of stone in his working place	–	1	–	–	–	1
44	Aug. 8 3.50 p.m.	7	Hutton Henry	Wingate	Hutton Henry Coal Co., Limited.	Andrew Robertson	21	Hewer	Fall of a stone from a breaker by the side of an old broken jud.	–	1	–	–	–	1
45	Aug. 13 10.15 a.m.	5	Houghton	Fence Houses	Earl of Durham	John Pugh	14	Driver	Fall of stone from roof, as he was taking an empty set of tubs into station, caused by some timber being displaced, which caught and killed him instantly.	–	1	–	–	–	1
46	Aug. 14 3.30 p.m.	6	Thornley	Thornley	Weardale Iron Co., Limited.	John Tate	28	Hewer	Head injured by fall of stone. Died on the 26th instant.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost.					
										Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
47	1894. Aug. 17 6.30 p.m.	2	Black Boy -	Auckland -	Bolckow, Vaughan, & Co., Limited.	James Rudd -	37	Hewer -	Burnt by an explosion of gas; he went through a fence with a naked light. Died on the 20th instant.	1	–	–	–	–	1
48	Aug. 18 12.45p.m.	5	Hutton Henry	Wingate -	Hutton Henry Coal Co., Limited.	Ra. Bainbridge -	28	Ditto -	While coming out-bye on the main alley way a sudden fall of stone took place.	–	1	–	–	–	1
49	Aug. 21 12.30p.m.	7	South Moor -	Chester-le-Street	South Moor Coal Co., Limited.	Ralph Postle -	25	Putter -	While putting an empty tub in-bye he was met by another putter coming out-bye with a full tub, when the two collided breaking his skull.	–	–	–	1	–	1
50	Aug. 23 1.0 p.m.	7	Edmondsley -	Ditto -	Edmondsley Coal Co., Limited.	Joseph Hare -	17	Rolleyway-man.	Got entangled between wheel and endless rope driving a pump and crushed against the roof.	–	–	–	1	–	1
51	Sept. 1 10.0 a.m.	6	West Thornley	Tow Law -	Weardale Iron and Coal Co., Limited.	Thomas Henry Murray.	16	Driver -	Head and body severely crushed by tubs running amain on incline. Died on the 3rd instant.	–	–	–	1	–	1
52	Sept. 3 3.0 a.m.	5	Wheatley Hill	Thornley -	Ditto -	James Knight -	49	Stoneman -	He drew out a prop preparatory to building a pack when a large fall of stone took place.	–	1	–	–	–	1
53	Sept. 4 2.30 p.m.	9	South Pontop	Annfield Plain	U. A. Ritson - -	John Tucker -	13	Coupler -	Fell from one of the shaft mouthings on to the top of a cage, a distance of 75 feet, receiving such injuries that he died in a few hours.	–	–	1	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
54	1894. Sept. 5 5.15 p.m.	8	Pelton - -	Chester-le-Street	Lord Dunsaney and Partners.	William Purvis -	37	Deputy -	He had finished drawing a broken jud, and while examining the outlet a stone fell on to him.	–	1	–	–	–	1
55	Sept. 6 2.30 p.m.	5	West Auckland	Auckland -	Bolckow, Vaughan, & Co., Limited.	George Vickers -	22	Hewer -	Burnt on arms and face by explosion of gas, alleged to have gone past a fence. Died on the 7th instant.	1	–	–	–	–	1
56	Sept. 7 3.35 p.m.	10	Cornsay -	Lanchester -	Ferens and Love -	Geo. Collinson -	73	Boilerminder	Knocked down and run over by a locomotive engine, while crossing over the branches, near or under the screens, to his work.	–	–	–	–	1	1
57	Sept. 12 3.45 p.m.	10	Black Hill -	Consett - -	Consett Iron Co., Limited.	John Stoker -	16	Driver -	He got on to the wrong side of his set, and was crushed to death between tub and wall.	–	–	–	1	–	1
58	Sept. 13 1.0 p.m.	3	Wingate Grange.	Wingate -	Owners of Wingate Grange Colliery.	Robert Wright -	25	Hewer -	Fall of a large stone from an unseen slip.	–	1	–	–	–	1
59	Sept. 18 12.0 p.m.	6	Margaret -	Fence Houses -	Earl of Durham -	R. A. Nicholson -	13	Driver -	Run over by a set of full tubs, supposed to have been hanging on his pony when the hook slipped off.	–	–	–	1	–	1
60	Oct. 3 7.20 p.m.	6	Haswell -	Sunderland -	Haswell Coal Co., Limited.	Robert Henry Hackworth.	29	Shaftman -	While engaged in main coal haulage he, by some means, fell down the back shaft a distance of 90 yards, and was killed.	–	–	1	–	–	1
61	Oct. 15 10.20a.m.	1	Hunwick -	Auckland -	Bolckow, Vaughan, & Co., Limited.	Robert Braton -	35	Hewer -	Fall of stone while working in a wide bord.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
62	1894. Oct. 18 10.0 a.m.	5	Norwood -	Evenwood -	Norwood Coal Co. -	George White -	22	Hewer -	Fall of stone which canted out some timber.	–	1	–	–	–	1
63	Oct. 20 10.20a.m.	1	Westwood -	Medomsley -	Consett Iron Co., Limited.	Jopling Forster -	42	Ditto -	While walking in-bye he fell and hurt his knee; erysipelas set in and he died on the 7th November.	–	–	–	1	–	1
64	Oct. 26 8.30 a.m.	5	Edmondsley -	Chester-le-Street	Edmondsley Coal Co.	John Lowes -	50	Ditto -	Fall of top coal which he had neglected to sprag.	–	1	–	–	–	1
65	Nov. 7 6.0 p.m.	5	Murton -	Sunderland -	South Hetton Coal Co., Limited.	Thomas Craggs -	17	Landing boy	Crushed by set getting off the way -	–	–	–	1	–	1
66	Nov. 13 12.5 a.m.	7	Binchester -	Auckland -	Bolckow, Vaughan, & Co., Limited.	George Smith -	61	Stoneman -	Fall of stone from between two balks after having fired a shot in the bottom, the shot appears to have either blown out or undermined some timber.	–	1	–	–	–	1
67	Nov. 14 3.10 p.m.	6	Pelton - -	Chester-le-Street	Lord Dunsaney and Partners.	George Pigg -	57	Deputy -	While engaged drawing timber out of an old bord a fall took place which canted out several balks and props.	–	1	–	–	–	1
68	Nov. 22 7 a.m.	1	Hazard -	Fence Houses -	North Hetton Coal Co., Limited.	John Swift - -	17	Screener -	Crushed between truck and screen leg while letting it out from under the screens.	–	–	–	–	1	1
69	Nov. 28 1.0 p.m.	9	Murton -	Sunderland -	South Hetton Coal Co., Limited.	Wm. Hollis - -	17	Landing lad	Severe injury to head by winch handle while coupling ropes. Died 19th December.	–	–	–	1	–	1

List of Fatal Accidents—*continued*.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
70	1894. Nov. 30 8.30 a.m.	3	Newbottle -	Fence Houses -	Earl of Durham -	J. H. Nelson -	18	Putter -	Severe injuries to head, caught between tub and roof. Died on 2nd December.	–	–	–	1	–	1
71	Nov. 30 4.30 p.m.	7	Wingate Grange. -	Wingate -	Owners of Wingate Grange Colliery.	John Goynes -	26	Deputy -	Fall of stone while drawing timber out of a broken jud.	–	1	–	–	–	1
72	Dec. 1 7.50 a.m.	2	Brancepeth -	Willington -	Strakers and Love -	William Smith -	40	Labourer -	While assisting to load timber in the yard he fell off a quay wall, receiving such injuries as resulted in his death on the 17th instant.	–	–	–	–	1	1
73	Dec. 4 8.15 a.m.	4	Blackhill -	Consett - -	Consett Iron Co., Limited.	James Thompson -	28	Hewer -	Fall of stone from between two slips.	–	1	–	–	–	1
74	Dec. 15 10.0 a.m	5	Newbottle -	Fence Houses -	Earl of Durham -	Henry Mornell -	24	Wagon rider	Broken thigh, the brake of the wagon had not been pinned on, and fell off, deceased fell before the wagons, and was so severely crushed that he died on the 23rd instant.	–	–	–	–	1	1
									Total - -	2	34	6	25	8	75

SCHEDULE F.

MINES CLASSED UNDER THE COAL MINES REGULATION ACT, 1887.

LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom within One Year and a Day from the Date of the Accident, in the CLEVELAND IRONSTONE portion of MR. BELL'S DISTRICT, during the Year 1894.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous Underground.	Lives lost. Above Ground.	Lives lost. Total.
	1894.														
1	Jan. 17 11.30a.m.	6	Grinkle	Port Mulgrave	Palmer's Shipbuilding and Iron Co., Ltd.	Joseph Gibson	51	Blacksmith	He received a slight scratch on hand by piece of iron on 17th November last, and died to day from blood poisoning.	–	–	–	–	1	1
2	Jan. 27 9.40 a.m.	4	Eston	Middlesbro'	Bolckow, Vaughan, & Co., Limited.	Peter Gray	23	Miner	While barring stone down, after a shot, a large piece fell and killed him.	–	1	–	–	–	1
3	Mar. 2 10.45 a.m.	3	Ditto	Ditto	Ditto	Richard Everett	33	Ditto	Returned too soon to a supposed missed shot when it exploded and so severely injured him that he died in a few hours.	–	–	–	1	–	1
4	Mar. 5 2.0 p.m.	6	Ditto	Ditto	Ditto	Charles Cooper	49	Ditto	A fall of stone from the top caught him on the head while filling a tub.	–	1	–	–	–	1
5	June 9 7.0 a.m.	1	Skelton Park	Guisbro'	Bell Brothers, Limited	John Chambers	30	Machineman	While assisting to remove a drilling machine to another place it got off the way, tilted over, and killed him.	–	–	–	1	–	1
6	June 26 11.15a.m.	6	Eston	Middlesbro'	Bolckow, Vaughan, & Co., Limited.	John Cripps	40	Miner	While engaged filling a tub a large quantity of stone recently loosened by a shot suddenly fell on to him.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
7	1894. July 25 10.40a.m.	5	Eston - -	Middlesbro' -	Bolckow, Vaughan, & Co., Limited.	William Thos. Lunn	46	Miner -	On firing a shot a prop was knocked out and while re-setting it a large fall of stone took place, and although warned he could not get clear of it.	–	1	–	–	–	1
8	Aug. 11 10 a.m.	4	Normanby -	Ditto -	Cargo Fleet Iron Co., Limited.	Samuel Shone -	74	Deputy -	Injury to chest by fall of a balk while drawing timber. Died on the 23rd.	–	–	–	1	–	1
9	Oct. 16 11.15a.m.	4	Eston - -	Ditto -	Bolckow, Vaughan, & Co., Limited.	Jesse W. Lane -	37	Miner -	Fall of a piece of stone after a shot which knocked a prop out.	–	1	–	–	–	1
10	Nov. 6 10 a.m.	4	Skelton -	Guisbro' -	Bell Brothers, Limited.	Charles Tubby -	40	Deputy -	While engaged putting in a balk of timber it fell and crushed his neck against the edge of an empty tub.	–	–	–	1	–	1
11	Nov. 30 8.30 a.m.	3	Rosedale -	Rosedale -	Carlton Iron Co., Limited.	John Stabler -	30	Driver -	Fall of stone which knocked out a prop, close to where he was standing, and which struck him on the breast and killed him.	–	1	–	–	–	1
									Totals - -	–	6	–	4	1	11

SCHEDULE G.

LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom within one YEAR and a DAY from the DATE of the ACCIDENT, of PERSONS employed, on PRIVATE BRANCH RAILWAYS and TRAMWAYS, and in WASHING and COKING COAL on PREMISES adjacent to or belonging to the MINES in MR. BELL'S DISTRICT, comprising SOUTH DURHAM, WESTMORELAND, and the NORTH RIDING of the COUNTY of YORK, during the Year 1894.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Private Branch Railways and Tramways.	Coal Washing Machines.	Coke Ovens.	Miscellaneous.	Total.
1	1894. Apr. 13 2.0 p.m.	8	Eston -	Middlesbro' -	Bolckow, Vaughan, & Co., Limited.	Thomas Harriman	50	Miner -	Died to day from an injury to foot caused by jumping off a set of tubs on the 7th November last, while riding on a private tramway on the surface.	1	–	–	–	1
2	Apr. 24 11.0 a.m.	4	Binchester -	Auckland -	Ditto -	James Hunter -	34	Railway Guard.	While shunting wagons on coke oven sidings he neglected to use the coupling pole, and in jumping off his foot became entangled in a crossing and he was run over.	1	–	–	–	1
3	Oct. 18 3.0 p.m.	8	Lambton -	Fence Houses -	Earl of Durham -	Robert Miller -	22	Platelayer -	He was attempting to get on a set of wagons while in motion, and fell and was run over.	1	–	–	–	1
									Totals - -	3	–	–	–	3

Lives lost at Coal Mines - - - - 75
" " Ironstone Mines - - - 11

Total lives lost under Coal Mines Act - 89

SCHEDULE H.

MINES CLASSED UNDER THE METALLIFEROUS MINES REGULATION ACTS, 1872 AND 1875.

LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom within one YEAR and a DAY from the Date of the ACCIDENT in MR. BELL'S DISTRICT, comprising the Counties of DURHAM and WESTMORELAND, and the NORTH RIDING of the COUNTY of YORK, during the Year 1894.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost.					
										Explosions of Fire-damp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1	1894. Ma:. 14 5.0 p.m.	11	Greenlaws -	St. John's Chapel.	Weardale Lead Co., Limited.	Thomas Dalton -	15	Ore washer	While trespassing on the dressing floor he set the buddle in motion and was dragged among the machinery.	–	–	–	–	1	1
2	Oct. 5 9.30 a.m.	3	Goathland -	Grosmont -	George Schofield -	John Hodgson -	58	Miner -	Killed instantly by fall of roof -	–	1	–	–	–	1
3	Nov. 14 3.30 p.m.	9	Cliffrigg and Slacks.	Great Ayton -	Wm. Winn - -	David Pearson - William Watson -	45 38	Ditto - Ditto -	A heavy fall of whinstone from the roof of the mine.	–	2	–	–	–	2
4	Nov. 15 1.0 p.m.	6	Carricks -	Weardale -	Weardale Iron Co., Limited.	Thomas Hodgson -	48	Ditto -	Fall of ironstone from the roof -	–	1	–	–	–	1
									Totals - -	–	4	–	–	1	5

SCHEDULE I.

The following DEATHS occurring to PERSONS employed in or about the MINES have been reported to me during the Year 1894, for the DURHAM DISTRICT, and were found, on investigation, not to be due to ACCIDENTS comprised within the MINING ACTS, or occurring within a Year and a Day of the date of the ACCIDENTS.

No. of Accident or Death.	Date and Hour of the Accident or Death.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Total Deaths.
1	1894. Jan. 18 4.30 a.m.	3	Charlaw - -	Sacriston -	Charlaw and Sacriston Collieries Co., Limited.	Morton Gibson -	59	Hewer -	Died to-day from the effects of a blow, from a pick, on his chest on the 16th December 1892.	1
2	Feb. 11	—	Ryhope - -	Sunderland -	Ryhope Coal Co., Limited	Robt. Gallagher -	—	Ditto -	Alleged to have received an accident about 28 weeks ago, but he recovered, and died to-day from bronchitis.	1
3	Apr. 9 2.30 p.m.	9	East Hetton -	Coxhoe -	Walter Scott, Limited -	Andrew Clotworthy	63	Screener -	Died while at his work on the screens, from syncope following previous heart disease.	1
4	Apr. 10 12.0 p.m.	7	Ryhope -	Sunderland -	Ryhope Coal Co., Limited	Wm. Chisholm -	66	Banksman -	Died, while at his work, from failure of the heart's action.	1
5	Apr. 20 1.30 p.m.	4	Brandon -	Durham -	Strakers and Love -	Thomas Lowther -	27	Hewer -	Died from the effects of injuries to back, caused by a fall of stone while attending to his work on 22nd March 1893.	1
6	Apr. 27 6.45 a.m.	1	Waldridge -	Chester-le-Street	Waldridge Coal Co. -	Edward Mason -	15	Driver -	Died suddenly on the rolleyway while walking in-bye to his work.	1
7	May 13 6.30 a.m.	3	Littletown -	Durham -	Earl of Durham - -	George Robinson -	27	Hewer -	Died to-day from paralysis, the result of severe injuries to spine caused by a fall of stone on the 3rd of May 1893.	1
8	June 8 2.30 p.m.	10	Ryhope - -	Sunderland -	Ryhope Coal Co., Limited	Thomas Gaze -	17	Putter -	After finishing his work in the pit he was trespassing on the branch railway, and in attempting to get on to wagons while in motion he fell and was run over.	1

List of Deaths—*continued*.

No. of Accident or Death.	Date and Hour of the Accident or Death.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Total Deaths.
9	1894. June 11 11.45a.m.	2	Rough Lea -	Auckland -	North Bitchburn Coal Co., Limited.	Samuel Thompson	30	Hewer -	Died in his working place from heart disease. The ventilation was good.	1
10	June 25 10.15a.m.	6	Middridge -	Ditto -	Weardale Coal and Iron Co., Limited.	Jas. Stephenson -	40	Ditto -	Returning from his day's work, he fell and died from heart disease on the main rolleyway.	1
11	July 8 3.0 a.m.	6	Hutton Henry -	Wingate -	Hutton Henry Coal Co., Limited,	Wm. Davison -	62	Stoneman -	Died from the effects of an internal sprain received by lifting a tub while at work in the pit on the 20th September 1892.	1
12	Aug. 30 10.50a.m.	5	Newbottle -	Fence Houses -	Earl of Durham - -	C. H. Aittis -	45	Screenman-	When proceeding from his work homewards he was seized with a fit of coughing, resulting in a broken blood vessel from which he died shortly after.	1
13	Sept. 8 8.0 a.m.	5	Eppleton -	Hetton -	Hetton Coal Co., Limited -	John Brown -	69	Wasteman	Received slight injury to finger, and by improper treatment he died from blood poisoning on the 24th November.	1
14	Sept. 28 5.30 p.m.	2	Ryhope -	Sunderland -	Ryhope Coal Co., Limited	Henry Brown -	47	Hewer -	Died to-day, it is alleged, from an accident to hand received on June 22nd last, but post-mortem examination showed that this had nothing to do with death.	1
15	Oct. 8 3.20 a.m.	—	Sunniside -	Crook -	Pease & Partners, Limited	Cuthbert Robinson	75	Shifter -	Died suddenly in the pit while at work - -	1
16	Oct. 25 1.0 a.m.	7	Leasingthorne -	Auckland -	Bolckow, Vaughan, & Co., Limited.	Thomas Kell -	60	Ditto -	Died in the pit from syncope on his way out-bye. Ventilation all right.	1

List of Deaths—*continued*.

No. of Accident or Death.	Date and Hour of the Accident or Death.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Total Deaths.
17	1894. Dec. 10 12.30p.m.	7	Murton -	Sunderland -	South Hetton Coal Co., Limited.	John Bray -	38	Hewer -	Died from heart disease on main rolleyway, while on his way home from his work.	1
18	Dec. 17 4.0 a.m.	6	Seaham -	Ditto -	Marquess of Londonderry	John Cowell -	67	Shifter -	Died in the pit from natural causes while following his employment.	1
									Total - - - - -	18

Reports of Assistant Inspectors.

Sir, Bishop Auckland, 4th February 1895.

In accordance with the 20th section of the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the year 1894 I exercised the duties of an Inspector of Mines in the Durham District (No. 4) under the direction of Mr. Thomas Bell, the Chief Inspector.

I also acted in the same district and under the same directions under the Coal Mines Regulation Act, 1887.

I have, &c.,
JOHN PLUMMER.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

Sir, Durham, 15th February 1895.

In accordance with the 20th section of the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the year 1894 I acted as an Inspector of Mines in the Durham Inspection District (No. 4) under the directions of Mr. Thomas Bell, the Chief Inspector.

I also acted in the same district and under the same directions under the Coal Mines Regulation Act, 1887.

I have, &c.,
WM. WALKER.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

REPORT

OF

C. LE NEVE FOSTER, Esq., H.M. INSPECTOR OF MINES

FOR THE

NORTH WALES, &c., AND ISLE OF MAN DISTRICT (No. 9),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER THE

Metalliferous Mines Regulation Acts, 1872 and 1875, the Slate Mines (Gunpowder) Act, 1882, and the Metalliferous Mines (Isle of Man) Act, 1891.

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
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Dr. C. Le Neve Foster's Report.

REPORT upon the INSPECTION of MINES classed under the METALLIFEROUS MINES REGULATION ACTS, 1872 and 1875, in the Counties of ANGLESEY, BRECON, CARDIGAN, CARNARVON, DENBIGH, FLINT, MERIONETH, MONTGOMERY, RADNOR, KENT, MIDDLESEX, SURREY, and SUSSEX, and in the ISLE OF MAN, for the Year 1894.—By C. LE NEVE FOSTER, Esq., B.A., D.Sc., F.R.S., A.R.S.M.

SIR, London, 14th February 1895.

IN compliance with section 20 of the Metalliferous Mines Regulation Act, I have the honour to present you my Annual Report for the year ended 31st December 1894.

I divide my Report into five chapters:—

Chapter I.—Number of persons employed at mines and certain openworks.

„ II.—Quantity and value of minerals produced at mines and certain openworks.

„ III.—List of fatal and non-fatal accidents at ore mines and certain other mines. List of fatal and non-fatal accidents at slate mines. Remarks about certain accidents. Summary. Comparison with the previous 19 years. Comparison between ore mines and slate mines as regards accidents. General results. Tables showing the nature of the injuries caused by non-fatal accidents and the periods of disablement.

„ IV.—Prosecutions in 1894: Bryn Dyfi, Bryn-y-caniadau, Maesmawr, Moel Ispri, Votty and Bowydd. Proceedings against workmen.

„ V.—General remarks: Special rules. Ordinary exemptions. Exemptions under the Slate Mines (Gunpowder) Act. Abandoned mines. New mines. Quarries Act. Assistant Inspectors. Summary of Work.

Chapter I.—Number of Persons employed at Mines and certain Openworks.

The following tables give summaries of the returns of persons employed in and about the mines and certain openworks in my district:—

Mines.

Persons employed in 1894 in and about Mines.

Situation of Mines.	Underground. Male Persons.				Above Ground.							Total underground and above ground.
					Ages 11 to 13.		Ages 13 to 18.		Ages above 18.		Total.	
	Ages 12 to 13.	Ages 13 to 16.	Ages above 16.	Total.	Males.	Females.	Males.	Females.	Males.	Females.		
Copper, Lead, Zinc, and other Mines, exclusive of Slate Mines.												
Anglesey	—	—	4	4	—	—	4	—	127	—	131	135
Breconshire	—	—	32	32	—	—	3	—	12	—	15	47
Cardiganshire	—	—	183	183	—	—	58	5	76	18	157	340
Carnarvonshire	—	1	76	77	—	—	12	—	99	—	111	188
Denbighshire	—	—	240	240	—	—	67	—	220	—	287	527
Flintshire	—	—	422	422	—	—	65	—	159	—	224	646
Merionethshire	—	4	136	140	—	—	18	—	91	—	109	249
Montgomeryshire	—	—	72	72	—	—	11	—	34	—	45	117
Radnorshire	—	—	2	2	—	—	—	—	—	—	—	2
Surrey	—	—	27	27	—	—	—	—	2	—	2	29
Sussex	—	—	14	14	—	—	—	—	26	—	26	40
Isle of Man	—	—	449	449	6	—	66	—	216	3	291	740
Totals, exclusive of the Slate mines	—	5	1,657	1,662	6	—	304	5	1,062	21	1,398	3,060
Slate Mines.												
Carnarvonshire	—	—	18	18	—	—	4	—	20	—	24	42
Denbighshire	—	—	42	42	—	—	5	—	28	—	33	75
Merionethshire	—	9	2,211	2,220	—	—	261	—	1,971	—	2,232	4,452
Montgomeryshire	—	—	6	6	—	—	4	—	6	—	10	16
Totals for the Slate mines	—	9	2,277	2,286	—	—	274	—	2,025	—	2,299	4,585
Totals for all the mines	—	14	3,934	3,948	6	—	578	5	3,087	21	3,697	7,645

Compared with 1893 there is a diminution of 113 persons in the total number employed.

Openworks.

In consequence of the passing of the Quarries Act, 1894, all openworks in my district more than 20 feet deep will now come under my inspection. I have received returns of persons employed from very many of them, but it is useless to quote figures so long as they are imperfect; besides, the returns which have been sent to me do not distinguish the persons employed in the actual pits, holes, or excavations from those who work outside. Next year the statutory returns will enable me to furnish accurate information. In the meantime, for the sake of continuing statistics furnished in previous years, I give the number of persons employed at certain of the openworks.

Persons employed in 1894 at the Open Slate Quarries, Fuller's Earth, Ochre and Umber Pits, and Works treating Mine Refuse.

County.	Total Number of Persons.
Anglesey	24
Cardiganshire	8
Carnarvonshire	8,854
Denbighshire	83
Flintshire	18
Merionethshire	266
Montgomeryshire	112
Surrey	43
Isle of Man	1
Total	9,409

CHAPTER II.—QUANTITY AND VALUE OF MINERALS PRODUCED AT MINES AND CERTAIN OPENWORKS.

The Parliamentary Blue Book entitled "The Mineral Statistics of the United Kingdom" will show the produce of each mine in my district, and in this chapter I merely give a general summary for 1894.

MINES.

County.	Quantity.	Value at the Mines.
BARYTES.		
Montgomeryshire - - - -	Statute Tons. 836	£ 418
COPPER ORE.		
Merionethshire - - - -	45	£ 126
COPPER PRECIPITATE.		
Anglesey - - - - -	230	£ 2,140
GOLD ORE.		
Merionethshire - - - -	6,603	£ 13,573
GYPSUM.		
Sussex - - - - -	7,626	£ 3,677
IRON PYRITES.		
Carnarvonshire - - - -	3,712	£ 2,784

County.	Quantity.	Value at the Mines.
LEAD ORE.		
	Statute Tons.	£
Breconshire - - - -	219	1,204
Cardiganshire - - - -	323	1,822
Carnarvonshire - - - -	84	543
Denbighshire - - - -	783½	4,858
Flintshire - - - - -	5,412½	34,086
Montgomeryshire - - - -	502	3,167
Isle of Man - - - -	5,624	42,218
	12,948	87,898
MANGANESE ORE.		
		£
Carnarvonshire - - -	59	55
Merionethshire - - -	1,683	655
	1,742	710
OCHRE AND UMBER.		
		£
Anglesey - - - - -	1,175	2,280
SLATE AND SLABS (DRESSED).		
		£
Carnarvonshire - - - -	1,000	2,750
Denbighshire - - - -	2,356	5,618
Merionethshire - - - -	146,944	431,107
Montgomeryshire - - - -	600	923
	150,900	490,398
STONE, &c.		
		£
Flintshire - - - -	40	6
Merionethshire - - - -	1,704	213
Montgomeryshire - - -	80	80
Surrey - - - - -	10,642	3,995
	12,466	4,294
ZINC ORE.		
		£
Anglesey - - - - -	955	1,434
Cardiganshire - - - -	3,033	8,654
Carnarvonshire - - - -	378	1,258
Denbighshire - - - -	5,732	25,318
Flintshire - - - - -	1,030	2,737
Isle of Man - - - -	2,579	8,582
	13,707	47,983

Total value - - 656,281*l.*

Compared with the previous year, there is a diminution in the quantities of iron pyrites, lead ore, ochre, stone and zinc ore, and an increase in the quantities of barytes, copper ore, gold ore, gypsum, manganese ore and slate. The total value is about 10,000*l.* higher than in 1893.

Openworks.

The output of certain openworks in 1894 was,—

County.	Quantity.	Value at the Openworks.
Clay (Fuller's Earth).		
	Statute Tons.	£
Surrey - - - - -	6,065	7,848
Lead Ore.		
		£
Flintshire - - - - -	22	95
Ochre, Rottenstone, and Umber.		
		£
Anglesey - - - - -	580	1,095
Isle of Man - - - -	23	70
	603	1,165
Slate and Slabs (dressed).		
		£
Cardiganshire - - - -	241	447
Carnarvonshire - - - -	272,673	583,797
Denbighshire - - - -	1,524	4,485
Merionethshire - - - -	10,872	28,509
Montgomeryshire - - -	2,657	7,306
	287,967	624,544
Zinc Ore.		
		£
Flintshire - - - - -	151	358

Total value - - 634,010*l.*

There is a decided increase in the output of slate compared with 1893.

CHAPTER III.—ACCIDENTS: LIST OF FATAL AND NON-FATAL ACCIDENTS AT ORE MINES AND CERTAIN OTHER MINES. LIST OF FATAL AND NON-FATAL ACCIDENTS AT SLATE MINES. ADDITIONAL REMARKS ABOUT CERTAIN ACCIDENTS. SUMMARY OF ACCIDENTS ARRANGED ACCORDING TO CAUSES. COMPARISON WITH THE PREVIOUS 19 YEARS. COMPARISON BETWEEN ORE AND SLATE MINES AS REGARDS ACCIDENTS. GENERAL RESULTS OF THE YEAR. TABLES SHOWING NATURE OF INJURIES CAUSED BY NON-FATAL ACCIDENTS AND PERIODS OF DISABLEMENT.

The following tables contain an account of every accident reported to me during the year:—

ORE MINES.

LIST of the FATAL ACCIDENTS, and LOSS of LIFE arising therefrom, and of the NON-FATAL ACCIDENTS causing SERIOUS PERSONAL INJURY, or arising from EXPLOSIONS of GAS, POWDER, &c., or of any STEAM BOILER in the COPPER, LEAD, ZINC, and other MINES, exclusive of the SLATE MINES, in DR. C. LE NEVE FOSTER'S District during the Year 1894.

Date and Hour.	Hour of the Person's Shift.	No. of the Accident.	Name of the Mine.	Persons killed or injured. Names of Killed in thick type.	Occupation.	Reputed Age.	Length of Time the Person was prevented by the Effects of the Accident from resuming Work.	Cause of Accident, and Remarks.	No. of Persons killed.	No. of Persons injured.
				EXPLOSIONS OF FIREDAMP—None.						
				FALLS OF GROUND.						
1894. Apr. 23 9.30 a.m.	3rd	20	Snaefell - -	William Christian.	Miner - -	48	Still disabled, March 1895.	Unexpected fall of part of hanging wall of a "stope." Leg broken; foot amputated.	—	1
May 15 3 p.m.	7th	26	Minera - -	Robert Jones -	Miner - -	58	7 weeks -	Unexpected fall of the side of a "stope." Back, right hip, and scalp lacerated.	—	1
								Total falls of ground -	—	2
				IN SHAFTS.						
				Overwinding.—None.						
				Ropes and Chains breaking.—None.						
				Whilst ascending or descending by Machinery.—None.						
				Falling into shaft from Surface.—None.						
				Things falling from Surface.—None.						
				Falling from part way down.						
Sept. 11 1 p.m.	6th	56	Bryn-yr-afr -	John Evans - -	Miner - -	60	5 weeks - -	He was engaged in fixing a 5-inch lift of pumps in the shaft, and slipped while making a joint. He fell three or four fathoms, and received two cuts on the head.	—	1
				Things falling from part way down.						
Jan. 19 6.30 p.m.	11th	7	Minera -	Robert Davies -	Filler - -	35	5½ weeks -	A stone fell upon him from a kibble in an intermediate shaft. Back lacerated.	—	1
May 21 10.30 p.m.	1st	27	Talacre -	**John Pritchard.**	Miner - -	29	—	Fall of a "rider" or guiding frame for a bucket, in a shaft which was being sunk.	1	—
July 13 11.30 a.m.	6th	40	Foxdale - -	**William H. Cain**	Shaft - sinker (*shaftman*).	36	—	Fall of a bucket (*kibble*), which became detached from the spring-hook (*clevis*) at the end of the winding rope.	1	—
				Miscellaneous in Shafts—None.						
								Total in shafts - -	2	2

List of Accidents—*continued.*

Date and Hour.	Hour of the Person's Shift.	No. of the Accident.	Name of the Mine.	Persons killed or injured. Names of Killed in thick type.	Occupation.	Reputed Age.	Length of Time the Person was prevented by the Effects of the Accident from resuming Work.	Cause of Accident, and Remarks.	No. of Persons killed.	No. of Persons injured.
				MISCELLANEOUS UNDERGROUND.						
				Explosions of Gunpowder, &c.						
1894. Aug. 3 6.30 a.m.	1st	49	Minera	Aaron Jones	Miner	28	2 weeks	Explosion of remnants of a charge of Nobel's gelatine-dynamite, while his partner was boring a new hole with a percussive rock drill in the immediate vicinity of an old hole, which had been fired the previous day and had duly broken the ground. Unexploded remnants of gelatine-dynamite were found after the accident. Face and eyes cut.	—	1
				Suffocation by Gases—None.						
				Irruptions of Water—None.						
				Falling into Water—None.						
				On Inclined Planes—None.						
				By Trams and Tubs.						
Dec. 13 1.30 p.m.	8th	68	Halkyn	Edwin Bellis	Miner	19	Still disabled, March 1895.	While riding along the drainage tunnel on a low trolley, which he propelled with one foot, he fell off and broke the tibia of the left leg.	—	1
				By Machinery Underground—None.						
				By Underground Fires.—None.						
				Ropes and Chains breaking.—None.						
				Sundries Underground.—None.						
								Total miscellaneous underground.	—	2
				ON SURFACE.						
				Machinery on Surface.						
July 10 12.30 p.m.	6th	39	Nant-y-garw	Benjamin Conway.	Lead ore dresser.	22	6½ weeks	He was about to shift a belt from a fast pulley to a loose one with a piece of stick, when he slipped and was caught by a joint in the belt. Both bones of the right forearm broken below the elbow.	—	1
				Boilers bursting—None.						
				Miscellaneous on Surface.						
Jan. 5 6 a.m.	1st	4	Minera	John Abel	Miner	35	3 weeks	He slipped while walking, and put his foot into a small cistern which received water from the hot well of a pumping engine. Foot scalded.	—	1
April 30 11 a.m.	4th	21	Cefn Coch	Edward Evans	Carpenter	32	3½ months	While erecting a building, he fell from a scaffold. Collar-bone broken.	—	1
Sept. 18 3 p.m.	8th	60	Mawddach	Evan Lewis	Miner	35	1 week	Two holes above ground were charged with gelatine-dynamite, fire was put to the touch paper of each, and the men retired. One hole went off; Lewis, thinking that the fuse of the other had failed to ignite, returned at once, when it exploded. Forehead cut by a stone.	—	1
Oct. 19 4.20 p.m.	10th	64	British Gold	Humphrey Williams. Richard Jones	Miner Labourer	39 21	1 day 3 weeks	They fired two holes with blasting gelatine. One did not work properly, and they proposed to re-charge it after clearing out what appeared to be a little dirt. The drill they put into the hole became jammed. Jones struck it with a hammer, and so caused the explosion of remnants of the original charge. Williams had his arms bruised and cut; Jones had his forehead and face cut.	—	2
								Total on surface	—	6
								Gross total for the copper, lead, zinc, and other mines, exclusive of the slate mines.	2	12

SLATE MINES.

List of the **Fatal Accidents**, and **Loss of Life** arising therefrom, and of the **Non-fatal Accidents** causing **Serious Personal Injury**, or arising from **Explosions of Gas, Powder, &c.**, or of any **Steam Boiler**, in the **Slate Mines** in **Dr. C. Le Neve Foster's** District during the Year 1894.

Date and Hour.	Hour of the Person's Shift.	No. of the Accident.	Name of the Slate Mine.	Persons killed or injured. Names of Killed in thick type.	Occupation.	Reputed Age.	Length of Time the Person was prevented by the Effects of the Accident from resuming Work.	Cause of Accident, and Remarks.	No. of Persons killed.	No. of Persons Injured.
				Explosions of Fire-damp—None.						
				Falls of Ground.						
1894. Jan. 2 1.30 p.m.	7th	1	Oakeley	**John Roberts.**	Slate-getter (*rockman*).	39	—	Unexpected fall of part of the roof of his working place, which was only 5 feet high. The roof had been "sounded" by the deceased and his partner shortly before the accident, and pronounced safe.	1	–
Jan. 8 2.30 p.m.	7th	3	Ditto	John Roberts	Slate-getter (*rockman*).	29	10 months	He was standing on the working face holding the foot of a ladder for his partner, when a piece of rock weighing about a ton slipped a few feet down and struck his leg. He and his partner had examined the rock that morning, and pronounced it safe. Foot amputated.	–	1
May 4 9.30 a.m.	3rd	22	Oakeley	William Pritchard.	Slate-getter (*rockman*).	35	9½ weeks	A piece of rock, which he was in the act of getting down from the working face of a chamber, struck him on the foot and broke one of his toes.	–	1
May 9 9 a.m.	2nd	24	Votty and Bowydd.	William Jones	Slate-getter (*rockman*).	50	4½ months	He was prizing off a block of slate with a crowbar, when a small, sharp piece came off, slid down the crowbar, and cut off the forefinger of his right hand.	–	1
May 12 10.30 a.m.	4th	25	Rhosydd	**Owen Jones**	Slate-getter (*rockman*).	50	—	His partner was on the working-face getting down slate by a crowbar after blasting. Jones heard a piece rolling down, and ran to the side of the chamber, where he thought he would be in shelter; but he was struck on the head by a stone which unexpectedly came to the very spot where he was standing.	1	–
May 24 11 a.m.	4th	28	Diphwys Casson	**John Roberts**	Miner	49	—	Unexpected fall of a large slab from the roof of a working place about 4 ft. high and 12 ft. wide. The roof had been "sounded" about 20 minutes before the accident, and pronounced safe. The piece which fell weighed 4 to 4½ tons.	1	–
Aug. 20 3 p.m.	7th	52	Llechwedd	John Williams	Slate-getter (*rockman*).	46	11½ weeks	He was ascending the working face immediately after blasting, when some rock which had been loosened by the shot fell upon him. Severe contusion and sprain of right hip and thigh.	–	1
Sept. 17 10.30 a.m.	5th	58	Oakeley	**John Thomas.**	Slate-getter (*rockman*).	41	—	The deceased and another man were endeavouring to blast off from the side of a pillar a huge block of slate weighing between 40 and 50 tons. The 8-feet "pillaring" hole which they had bored was charged and fired three times in succession without detaching the mass; but about 20 to 30 minutes after the third firing, a thin slab fell off unexpectedly and killed John Thomas. He and his partner had "sounded" the very place whence the slab fell, and thought it safe.	1	–
Nov. 5 3.30 p.m.	9th	65	Bryneglwys	**Thomas O. Ellis.**	Miner	31	—	Unexpected fall of several hundred tons of rock from the roof of the chamber in which he was working. The roof was about 30 feet above him, and quite out of his reach.	1	–
Nov. 15 3 p.m.	8th	66	Oakeley	Thomas Pierce	Slate-getter (*rockman*).	32	10½ weeks	He received a scalp wound on the back of his head, and a sprained shoulder while at work in a chamber. Possibly he was struck by a small stone falling from the roof some 40 feet above his head, or the injury may have been caused by his falling upon the working face after being startled by the noise of stones falling from the roof.	–	1
Dec. 28 3.36 p.m.	8th	70	Fronboeth	William R. Jones.	Labourer	22	7 weeks	A piece of slate slipped away unexpectedly from the working face and struck Jones, who was at work on the floor of the chamber. Calf of leg cut.	–	1
								Total falls of ground	5	6

List of Accidents—*continued.*

Date and Hour.	Hour of the Person's Shift.	No. of the Accident.	Name of the Slate Mine.	Persons killed or injured. Names of Killed in thick type.	Occupation.	Reputed Age.	Length of Time the Person was prevented by the Effects of the Accident from resuming Work.	Cause of Accident, and Remarks.	No. of Persons killed.	No. of Persons injured.
				IN SHAFTS.						
				Overwinding—None.						
				Ropes and chains breaking—None.						
				Whilst ascending or descending by machinery—None.						
				Falling into shaft from surface—None.						
				Things falling from surface—None.						
				Falling from part way down.						
1894. Feb. 28 9 a.m.	2nd	11	Bryneglwys	**Owen Ellis**	Slate-getter (*rockman*).	42	—	He was in the act of climbing 6 feet down an inclined shaft in order to release a block of slate which had caught on a ledge while it was being lowered with a winch. His chain slipped off its supporting peg, and he fell to the bottom of the shaft, a distance of about 50 feet. It was ascertained after the accident that the supporting peg had been struck by the block of slate, and the chain thereby loosened.	1	-
July 4 8 a.m.	1st	35	Aberllefenny	**William Williams.**	Slate-getter (*rockman*).	20	—	While he was going down a step about 6 feet high in an underground chamber by means of a short ladder; it somehow overbalanced, and he fell with it. He was precipitated into an intermediate shaft used for lowering blocks of slate to the next level, and he dropped a distance of 60 feet.	1	-
				Things falling from part way down—None.						
				Miscellaneous in shafts—None.						
								Total in shafts	2	-
				MISCELLANEOUS UNDERGROUND.						
				Explosions of Gunpowder.						
Jan. 12 3 p.m.	8th	8	Oakeley	Elias Owen	Slate-getter (*rockman*).	21	1½ weeks	He had filled a small paper cartridge with a few ounces of gunpowder, and it somehow took fire from his candle, while he was about to put it into the hole he was going to charge. Face slightly burnt.	-	1
Feb. 19 11 a.m.	4th	9	Ditto	Samuel Jones	Slate-getter (*rockman*).	33	Permanently disabled.	He fired a hole which did not do full execution, and simply blew off about 1 foot of the top. After claying it out, he charged it with gunpowder, which he poured in from a tin canister. While he was about to ram in a wad of hay, the gunpowder went off in his face; it was probably ignited by a spark from his candle. Totally blinded.	-	1
May 30 11.30 a.m.	5th	30	Moelferna	John Rodgers	Slate-getter (*rockman*).	21	3 months	Explosion of gelatine-dynamite which he was ramming into a hole with an iron bar. Left hand badly injured; two fingers amputated.	-	1
June 8 8 a.m.	1st	33	Oakeley	Edward Jones	Slate-getter (*rockman*).	30	5½ weeks	Premature explosion of a small charge of gunpowder while he was ramming in tamping with a copper-tipped stemmer. Ankle sprained.	-	1
July 4 9 a.m.	2nd	36	Ditto	Hugh Pugh	Miner	32	23 weeks	Explosion of remnants of a charge of guncotton while he was drilling a new hole. He had chiselled off the rock around the old socket, and believed that no part of it remained. Face and left arm injured.	-	1
July 18 9 a.m.	2nd	44	New Welsh Slate	Griffith Griffiths	Slate-getter (*rockman*).	60	4 weeks	He was standing on the floor of his chamber and his partner was working near the top. A piece of slate rolled down the working face and struck him on the back.	-	1
July 20 8 a.m.	1st	45	Oakeley	Robert Hughes	Slate-getter (*rockman*).	35	10 weeks	He fired a hole charged with guncotton and gunpowder. A few minutes after it had gone off he returned to the place, when a second explosion took place. Face cut.	-	1
July 20 1 p.m.	6th	46	Llechwedd	Hugh Griffith	Slate-getter (*rockman*).	48	16½ weeks	Explosion of charge of gunpowder while ramming in tamping with a brass stemmer. Third and fourth finger and part of left hand amputated.	-	1
July 25 10 a.m.	3rd	47	Oakeley	John Thomas	Slate-getter (*rockman*).	22	7½ weeks	While at work in an underground chamber, he was struck by a stone from a blast in a chamber two floors higher up. He knew a shot was going to be fired, but did not think it necessary to retire. Severe wound on back of neck.	-	1

List of Accidents—*continued.*

Date and Hour.	Hour of the Person's Shift.	No. of the Accident.	Name of the Slate Mine.	Persons killed or injured. Names of Killed in thick type.	Occupation.	Reputed Age.	Length of Time the Person was prevented by the Effects of the Accident from resuming Work.	Cause of Accident, and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Aug. 16 9 a.m.	2nd	51	Oakeley - -	Robert Jones -	Slate-getter - (*rockman*)	25	Still disabled, March 1895.	Two holes about 21 inches apart were bored and charged, with the idea of not firing No. 2 until No 1 had gone off. No. 1 was duly fired and Jones returned in about three or four minutes in order to set light to No. 2; this exploded unexpectedly when he was within 3 yards of it. The end of the fuse of No. 2 had not been "clayed," and was no doubt ignited by the fire of No. 1. One eye badly injured and blinded.	–	1

Suffocation by Gases—None.
Irruptions of Water—None.
Falling into Water—None.
On Inclined Places—None.
By Trams and Tubs—None

By Machinery Underground.

Date and Hour.	Hour of Shift	No.	Name of the Slate Mine.	Persons killed or injured.	Occupation.	Reputed Age.	Length of Time	Cause of Accident, and Remarks.	Killed	Injured
Jan. 10 2.30 p.m.	7th	5	Oakeley - -	W. D. Williams	Labourer -	21	1½ weeks -	While he was lowering a block of slate weighing about a ton, he inadvertently let go the handle of the crane, which flew round and struck him on the forehead.	–	1
Feb. 21 5 p.m.	1st	10	Votty and Bowydd	John Glynne Owen.	Engine driver	43	8 months -	He went to an underground winding engine a little before relief time, and, without informing the day man of his arrival, set to work to oil the bearings of the flywheel. The day man, unaware of his presence, started the engine, and Owen was badly squeezed. Chest injured.	–	1
May 4 3 p.m.	8th	23	Oakeley - -	John Evans -	Labourer -	23	10½ weeks -	He had moved a block of slate with a crane, and, thinking it was resting firmly upon timber, was about to remove the crane handle. The block suddenly lurched a little and caused the handle to fly round. Shoulder blade fractured.	–	1
July 11 8 a.m.	1st	38	Votty and Bowydd	T. Wynne Williams.	Labourer -	27	7 weeks - -	He was lowering a block of slate weighing 2¼ tons on to a trolley by means of a crane, when the block shifted a little in the chain by which it was slung, and caused a jerk which made him let go. The handle flew round and struck him on the forehead, causing a slight fracture of the skull.	–	1
Aug. 1. 2.30 p.m.	8th	48	Maen Offeren -	Howell Hughes	Labourer clearing rubbish	24	5 weeks - -	He was turning the spur-wheel of a crane with his right hand in order to get more slack chain, and had his fingers pinched between the spur-wheel and the pinion. He had not disengaged the pinion as is usual. Tip of bone of last joint of middle finger amputated.	–	1
Sept. 14 1.30 p.m.	7th	59	Oakeley - -	R. Isaac Jones	Labourer -	20	1½ weeks - -	He was lowering a block of slate with a crane, when he let the handle slip; it was whirled round and struck him on the forehead.	–	1

By Underground Fires—None.

Ropes and Chains Breaking.

Date and Hour.	Hour of Shift	No.	Name of the Slate Mine.	Persons killed or injured.	Occupation.	Reputed Age.	Length of Time	Cause of Accident, and Remarks.	Killed	Injured
Mar. 16 3.45 p.m.	9th	14	Oakeley - -	Robert Jones -	Slate-getter (*rockman*).	32	4½ weeks - -	His supporting chain broke and he fell down the working face of his chamber. Severe shaking; shock to the system.	–	1
May 30 4 p.m.	8th	31	Oakeley - -	Robert Williams	Slate-getter (*rockman*).	51	6¾ weeks - -	While at work getting slate, his suspending chain broke, and he fell a distance of 20 yards down the working face. Some of his ribs broken. Cause of fracture of chain unknown.	–	1
Sep. 19 4 p.m.	9th	61	Oakeley - -	Griffith Jones -	Slate-getter (*rockman*).	50	5 weeks -	His rope broke while he was at work, and he fell down the working face of his chamber. Scalp wound. The rope was an old one, which his partner had warned him not to use.	–	1

Sundries Underground.

Date and Hour.	Hour of Shift	No.	Name of the Slate Mine.	Persons killed or injured.	Occupation.	Reputed Age.	Length of Time	Cause of Accident, and Remarks.	Killed	Injured
Jan. 4 4 p.m.	8th	2	Oakeley - -	Evan Morris -	Slate-getter (*rockman*).	35	6½ weeks - -	A gang of men were beginning to shift a ladder 75 feet long, used for examining the roof and sides of a large underground chamber; it fell over slowly and caught Morris. Back bruised.	–	1

List of Accidents—*continued.*

Date and Hour.	Hour of the Person's Shift.	No. of the Accident.	Name of the Slate Mine.	Persons killed or injured. Names of Killed in thick type.	Occupation.	Reputed Age.	Length of Time the Person was prevented by the Effects of the Accident from resuming Work.	Cause of Accident, and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. Feb. 8 6 p.m.	3rd	8	Oakeley - -	Evan Williams	Slate-getter (*rockman*).	32	11½ weeks - -	He climbed up a rope on the side of an underground chamber, with the intention of pulling part of it through a pulley-block. By inadvertence he pulled the whole of it through, and found himself hanging from the block some 30 feet from the ground. He fell before his partners could get a ladder long enough to reach him. Scalp wound, small bone of right arm broken.	-	1
Mar. 1 9.30 a.m.	3rd	12	New Welsh Slate	W. E. Jones -	Slate-getter (*rockman*).	36	8 weeks - -	While standing on a small stage on the working face, he was endeavouring to remove loose rock with a crowbar. He slipped and fell down the working face. Skull fractured.	-	1
Mar. 23 4.30 p.m.	9th	15	Ditto - -	John Thomas -	Slate-getter (*rockman*).	48	6½ weeks -	A stone lying on the floor of his chamber turned over on to his foot, and broke one of the bones.	-	1
Apr. 19 10 a.m.	3rd	19	New Welsh Slate	Evan Williams	Slate-getter (*rockman*).	22	3 weeks - -	Struck by a stone which, as far as could be ascertained, rolled down the heap of rubbish upon which he was standing. Scalp wound.	-	1
May 24 10 a.m.	3rd	29	Ditto - -	Thomas Evans -	Slate-getter (*rockman*).	51	5 weeks - -	He was splitting a block of slate on the floor of his chamber, when the piece which was split off slipped on to his left foot and cut it badly.	-	1
July 13 9.30 a.m.	3rd	42	New Welsh Slate	John Williams	Slate-getter (*rockman*).	48	8½ weeks - -	He was scraping away a hole with his hand under a block of slate resting against a heap of rubbish, in order to fasten a chain round it; the block slipped unexpectedly, and broke one of the bones of his right forearm.	-	1
Aug. 27 8 a.m.	1st	53	Ditto - -	**Hugh Davies.**	Labourer -	26	—	Inhaling air containing carbonic oxide discharged into a level from the fire of a steam boiler. They were returning along a level, through which they had entered the workings about half an hour before, when they were overcome by the poisonous atmosphere and died before they were discoverd.	2	-
				Thomas Price.	Carter - -	17	—			
Sept. 28 5 p.m.	9th	62	New Welsh Slate	Richard Jones -	Labourer -	17	6 weeks - -	He was loading blocks on to a trolley, when one of them shifted and cut the forefinger of his right hand badly. First joint of finger amputated.	-	1
Oct. 3 2.30 p.m.	7th	63	Maen Offeren -	William Hughes	Slate-getter (*rockman*).	53	16 weeks - -	While examing the working face after a blast, he slipped and fell 6 feet. Broke his right leg below the knee.	-	1
Dec. 13 11 a.m.	4th	67	New Welsh Slate	Griffith A. Jones	Labourer -	19	3½ weeks - -	He was standing in a level, and was startled by the noise of blasting near him; he jumped away suddenly, slipped, and fell on the ground. His forehead was severely cut by a sharp stone. It is also possible that the injury was inflicted by a stone hurled by the blast, as he had not sheltered himself properly.	-	1
								Total miscellaneous underground	2	29

ON SURFACE.

By Machinery on Surface.

Date and Hour.	Hour of the Person's Shift.	No. of the Accident.	Name of the Slate Mine.	Persons killed or injured.	Occupation.	Reputed Age.	Length of Time.	Cause of Accident, and Remarks.	No. of Persons killed.	No. of Persons injured.
Apr. 9 10 a.m.	3rd	16	Oakeley - -	Evan Owen - -	Slate-dresser (*quarryman*).	16	7 weeks - -	Put his foot into the wheel for reversing and stopping the sawing-table. Right leg broken.	-	1
Apr. 11 8 a.m.	1st	17	Maen Offeren -	David Jones -	Slate-dresser	17	7 weeks - -	While he was dressing slates with a revolving knife machine, he had the first and second fingers of his right hand so badly cut that parts of them had to be amputated.	-	1
Apr. 12 7.30 p.m.	12th	18	Oakeley -	**Ellis Evans**	Breaking up waste rock (*smasher*).	28	—	Fall of part of a derrick, while he was assisting in raising an old boiler tube.	1	-
June 7 2 p.m.	7th	32	Ditto -	John D. Jones -	Slate-dresser (*quarryman*).	28	7 weeks -	While dressing slate with a revolving slate-dressing machine, he placed his hand too far and had one inch of forefinger of right hand cut off.	-	1

Boilers bursting—None.

Miscellaneous on Surface.

Date and Hour.	Hour of the Person's Shift.	No. of the Accident.	Name of the Slate Mine.	Persons killed or injured.	Occupation.	Reputed Age.	Length of Time.	Cause of Accident, and Remarks.	No. of Persons killed.	No. of Persons injured.
Mar. 9 10 a.m.	3rd	13	Diphws Casson	Lewis Richards	Tipman -	70	6½ weeks - -	His crowbar slipped while he was clearing the tip, and he fell and cut his head.	-	1
June 8 11 a.m.	4th	34	Oakeley -	Owen Morris -	Labourer -	28	Still disabled, March 1895.	A stone rolled down the "fall" and broke his left leg. Foot amputated.	-	1

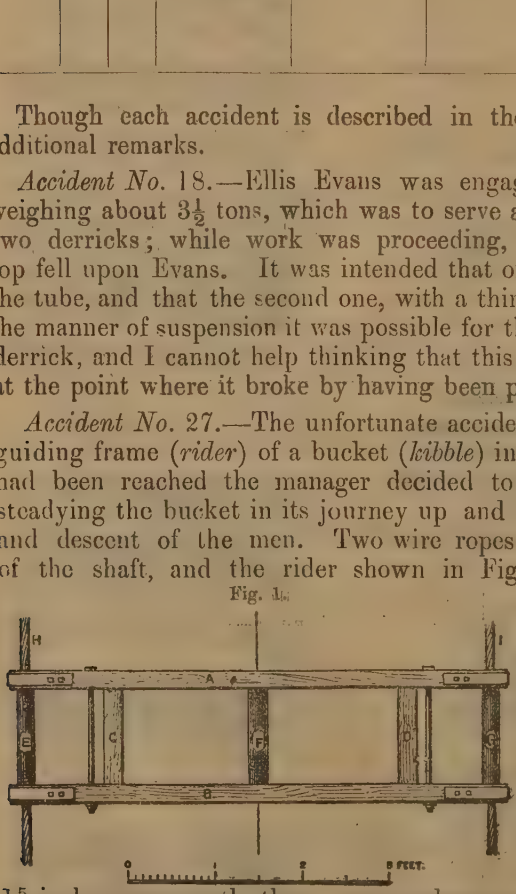
Date and Hour.	Hour of the Person's Shift.	No. of the Accident.	Name of the Slate Mine.	Persons killed or injured. Names of Killed in thick type.	Occupation.	Reputed Age.	Length of Time the Person was prevented by the Effects of the Accident from resuming Work.	Cause of Accident, and Remarks.	No. of Persons killed.	No. of Persons injured.
1894. July 3 8 a.m.	1st	37	Oakeley - -	Robert Roberts	Excavating rubbish (*clearer*).	2[illegible]	Still disabled, March 1895.	While he was at work on the "fall," a stone weighing about $1\frac{3}{4}$ lb. rolled down and hit him on the knee. Bad punctured wound.	–	1
July 12 8 a.m.	1st	41	Ditto -	Henry Williams	Excavating rubbish (*clearer*).	55	22 weeks - -	A large stone rolled down the "fall" and struck his foot. Big toe amputated.	–	1
July 17 1.30 p.m.	7th	43	Ditto - -	W. J. Williams	Breaking up big rocks (*smasher*).	52	3 weeks - -	A small stone weighing from 2 to 3 lbs. rolled down the "fall" and hit him on the head.	–	1
Aug. 3 3.30 p.m.	9th	50	Moelferna -	David Evans -	Slate loader -	23	7 weeks - -	The counterbalance waggon of a self-acting incline somehow left the rails in its ascent, and caused such a jerk to the descending travelling platform that the workman standing upon it was thrown off and received a severe blow on the head, causing concussion of the brain. Possibly the counterbalance waggon was thrown off the rails by a stone.	–	1
Aug. [illegible]7 2 p.m.	6th	54	Diphwys Casson	Hugh Hughes -	Labourer -	28	$3\frac{3}{4}$ weeks - -	Hand crushed while hooking two slate waggons together at the surface. Tips of two first fingers of right hand amputated.	–	1
Sep. 10 2 p.m.	6th	55	Oakeley - -	Lewis Davies -	Labourer -	19	5 weeks, 2 days	Davies was assisting two other men to lift a large slab of slate, when it broke in their hands. Davies' hand was severely cut by a sharp edge of the slate.	–	1
Sep. 14 11.30 a.m.	5th	57	Ditto - -	David Evans -	Breaking up waste rock (*smasher*).	29	$15\frac{1}{2}$ weeks - -	He was "jumping" a hole in a piece of loose rock in the "fall," when it rolled away from under his feet and threw him to the ground. Left thumb amputated.	–	1
Dec. 22 11.30 a.m.	4th	69	Llechwedd	William Jones -	Rockman -	48	Still disabled, March 1895.	He was leaving the quarry before the proper time, and was walking along a self-acting incline down which slate was being lowered; through want of care on his part, he was struck by the wire rope. Right leg broken.	–	1
								Total on surface - - -	1	13
								Gross total for the slate mines -	10	48

Though each accident is described in the tables, Nos. 18, 27, 40, and 53, require a few additional remarks.

Accident No. 18.—Ellis Evans was engaged with other men in raising an old boiler tube weighing about $3\frac{1}{2}$ tons, which was to serve as a chimney. The tube was suspended between two derricks; while work was proceeding, the pole of the smaller one snapped, and the top fell upon Evans. It was intended that one derrick should do the real work of supporting the tube, and that the second one, with a thinner pole, should simply serve as a guide. From the manner of suspension it was possible for the weight of the tube to come upon the smaller derrick, and I cannot help thinking that this happened. The pole had been slightly weakened at the point where it broke by having been pierced by several large nails.

Accident No. 27.—The unfortunate accident at Talacre Mine was caused by the fall of the guiding frame (*rider*) of a bucket (*kibble*) in a sinking shaft. When a depth of 120 yards had been reached the manager decided to put in guides, with the very laudable object of steadying the bucket in its journey up and down, and so increasing the safety of the ascent and descent of the men. Two wire ropes were put in and fixed to beams near the bottom of the shaft, and the rider shown in Figure 1 was prepared and placed upon the ropes.

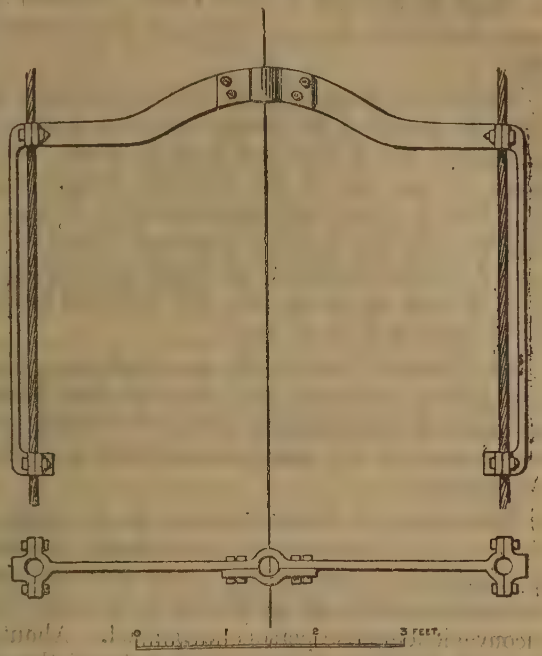
Fig. 1.



It was composed of two horizontal pieces of oak, A, B, kept apart by the distance pieces C, D, and provided with three pieces of iron pipe, E, F, G. The wire rope guides, H and I, passed through E and G, and the ordinary winding rope, shown by the centre line only, through F. The guide ropes, which were 1 inch in diameter, consisted of five stout wires, and had been bought second-hand at another mine in the neighbourhood. The internal diameter of the pipes E and G was $1\frac{5}{8}$ inch, consequently there was a clearance of only $\frac{5}{8}$ inch. The pipe through which the winding rope passed was larger, being 2 inches in diameter inside, and gave a clearance of

$1\frac{1}{8}$ inch. It is evident from its construction that the chance of the rider sticking was by no means small; it could not descend unless all three ropes were parallel, and it is easy to understand that a slight swaying of the bucket or of the guides, or a little dirt or chips getting into E or G, may have made the rider hitch for a moment. The apparatus had been put on for the first time on the afternoon of the accident, and had apparently worked all right from 2 p.m. till 10 p.m. Soon after that hour Pritchard and another man got into the bucket at the surface, in order to be lowered 54 yards to the adit level, where the guides were temporarily held firmly by doors which covered the shaft. The bucket went down safely and rested upon the doors, but while the men were in the act of getting out, the rider fell upon them unexpectedly, killing Pritchard upon the spot. There was a small bonnet or cover over the bucket which was bent by the force of the blow which it received. Evidently the rider had caught somewhere in its descent, and after allowing the bucket to proceed alone for a moment or two dropped suddenly. It has been already stated that the guide ropes were second-hand; they were somewhat rusty, and had not been greased. A somewhat similar accident happened in Scotland last year, and these casualties show that safety appliances may occasionally prove more dangerous than the risk they are intended to prevent. However, I learn from my former colleague, Mr. Galloway, that he has never known his rider to stick. Figure 2 explains the manner in which it is constructed.

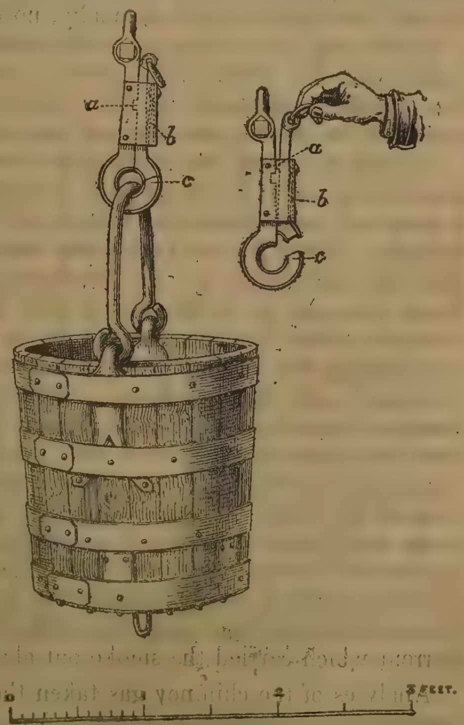
Fig. 2.



Accident No. 40.—This accident took place in a shaft which was being sunk at Foxdale Mine in the Isle of Man. A shaftman named Cain descended the shaft after blasting, in order to load the broken rock into a kibble and have it drawn up by a compressed air engine to a level 30 yards above him. During one of the upward journeys the kibble became detached from the hook, fell upon Cain, and killed him on the spot.

The hook and kibble are shown in Figure 3. When in use the hook was closed by a sliding bolt, kept in place by the projection *a* and the spring *b*. In order to open the hook the bolt is pulled back by the ring, as shown in the figure, so as to release the projecting stud *a*, and is then drawn up.

Fig. 3.



How the kibble happened to get loose and fall was never satisfactorily explained; the hook would have drawn up the kibble safely, even if it had been open, for the shaft was so roomy that there was no fear of anything striking the sides.

I elicited from one of the witnesses at the inquest that he had known a water-barrel when lowered rapidly to become detached from a hook of this description on striking the water in a shaft. I therefore suggest as an explanation that on reaching the bottom of the shaft, where Cain was at work, the hook received a blow from the bow of the kibble which in some manner caused it to open, and that when Cain rang to wind up, the end of the hook *c* caught against the bow and lifted it a few fathoms till it slipped off.

The man who sent the kibble down was positive that the hook was properly closed by him. Even if the hook was opened by a blow from the bow, it is strange that Cain did not notice how perilously the kibble was held when he started it on its upward journey. He was the only person in the shaft at the time, so the precise manner in which the casualty happened must always remain a matter of conjecture.

Accident No. 53.—Loss of life from inhaling carbonic oxide, or carbon monoxide, is so rare in mines, that a full description must be given of the fatality which happened at the New Welsh Slate (Cwmorthin) Mine last August. About half-past seven on a Monday morning several men walked in as usual to their accustomed working places through one of the tunnels driven into the hillside. Less than an hour afterwards William Williams, who was entering the level from the outside, stumbled across a horse lying on the ground; after calling for assistance he went in further, and found Richard Jones prostrate, and further on the bodies of Hugh Davies and Thomas Price. Richard Jones recovered after having been brought out, and was able to give a full account of the catastrophe at the coroner's inquest on the following day.

He and his partner, Hugh Davies, had gone in to their working place, about a quarter mile from the mouth of the tunnel, and were returning with a load of slate, which Thomas Price, the carter, was to draw out with his horse. On coming up to Price they found him sitting down by the side of the tramroad complaining that he was very ill. Jones said he would help him to go out, and endeavoured to do so; Price then found that his legs were so weak that he could not walk, so Jones got Davies to lift Price on to his back. Jones carried Price a yard or two, when his legs began to fail him, and he had to put his burden down. He then tried to walk out alone, but, like Price and Davies, fell down unconscious. The horse dropped a few yards in front of him.

Dr. Richard Jones, of Blaenau Festiniog, who treated Jones and Williams after they were brought out, and who saw the two dead bodies about two hours after the accident, had no hesitation in ascribing the fatality to carbonic oxide and not to carbonic acid. He said that the presence of very many characteristic symptoms left no doubt whatever in his mind upon the subject.

The source of the carbonic oxide was easily found. About 200 yards from the mouth of the tunnel, the chimney of a steam boiler, situated at a lower level, was discharging its smoke. Workings for slate at this point had left a large chamber, and originally the iron chimney had been carried well up into it, so that the fumes found their way to the surface without inconveniencing the persons employed. About a year or 18 months before the accident, this chimney was broken by a fall of roof, and the smoke was then allowed to issue into the level itself. Most of it escaped by ascending into the old chamber as before, but under certain atmospheric conditions some found its way out along the horizontal tunnel. The boiler had been in use for 15 years.

It is well known that the gases coming from boiler furnaces consist almost exclusively of oxygen, carbonic acid, and nitrogen, and the presence of carbon monoxide is unusual; and though it appeared from the evidence at the inquest that the men had complained of having to walk through smoke occasionally, no danger was apprehended from it.

In the early part of the year the manager heard good accounts of "Norman's Patent Fuel Economiser and Smoke Annihilator," and, after sending his engineer to see it at work, had the appliance attached to his underground boiler. Norman's method may be briefly described as burning the fuel with the aid of a forced draught created by jets of steam.

Instead of having the ordinary fire-bars, the furnace bottom consists of plates of iron with perforations about $\frac{3}{4}$-inch square; through these a strong current of air is driven by means of a couple of small steam jets outside the boiler, which act after the manner of a Körting air injector. These jets are kept going most of the time the furnace is at work, and there are also jets above the fire for producing an additional draught, if there is a tendency for the flame to escape by the fire-door; a special flue underneath the air-blast brings in a supply of fresh air, which becomes warmed before meeting with the hot gases escaping from the fire and passing over the bridge. The inventor professes that the furnace consumes everything, and that in this way it effects a considerable saving of fuel. Judging by the testimonials brought forward by the inventor, it can prevent the issue of black smoke from the chimney, but that perfect combustion is not always secured is proved by the accident. Though the furnace undoubtedly emitted carbonic oxide on the morning of the accident, it could not have done so for long. The men walked in without feeling any inconvenience, and were not overcome until half an hour later, on returning. William Williams, who went in probably about a quarter of an hour after they had fallen, felt the effects of the poisonous gas; but its issue must have ceased almost immediately, as the other rescuers were subjected to no discomfort. It should be said that on the morning of the accident the natural ventilation created a strong current which carried the smoke out along the level.

Analyses of the chimney gas taken the day after the accident showed that under ordinary circumstances combustion was complete, in fact, that the whole of the carbon of the coal was brought into the state of carbonic acid, and that none was left as carbonic oxide.

For some reason or other the supply of air during part of the morning of the accident was inadequate, and carbonic oxide, or, in other words, imperfectly consumed carbon, was discharged into the atmosphere of the mine. Several hypotheses suggested themselves to me as possible explanations of the insufficient supply of air :—

(1.) Door of the air-flue being improperly closed.
(2.) Air-flue being choked by ashes.
(3.) Excessive supply of steam, causing the formation of more water-gas than could be burnt inside the boiler.

The only person capable of throwing any light upon the working of the furnace on the morning of the accident was the stoker, and he declared that everything was in good order, the air-door properly open, the air-flues perfectly clear, and no greater amount of steam injected than usual. It is impossible to assert more than the fact that something went wrong. In justice to the inventor, I may say that he propounded the theory that some carbonic oxide accumulated in the flues between the Sunday morning, when the fires were damped, and the Monday morning, and that this carbonic oxide caused the accident. There are no grounds whatever for accepting this explanation; the facts are entirely opposed to it. The boiler was set to work at 4 a.m. on the Monday morning, and even if any carbonic oxide had accumulated in the flues during the Sunday, it would have been driven into the level and have been carried away by the strong draught long before the men entered the mine. Besides, the men felt no discomfort on entering; the poisonous gas which did the mischief was generated while they were in the mine. What caused the temporary deficiency of oxygen for the boiler fires will probably never be explained. No written or printed instructions for the stokers were supplied to the mine manager by the inventor, who considered his apparatus so simple that a few words from an experienced hand were all that was needed.

An apparatus which without apparent rhyme or reason suddenly goes wrong, is far from being as perfect as the inventor would wish one to suppose.

As the accident could be ascribed to inadequate ventilation, I reported it to you, and asked whether proceedings should be taken against the owners for a breach of the first general rule. The matter was fully investigated by the solicitor to the Treasury, who came to the conclusion that, taking all the circumstances of the case into consideration, it would be difficult to establish satisfactorily that the owners had not taken all reasonable means to provide proper and adequate ventilation. Consequently no proceedings were taken.

If one recollects that Norman's invention was applied to the boiler with a view to remedy the smoke nuisance of which the men complained, and that the boiler had been in use for many years, it is not likely that a court would have convicted the owner or agent.

I have placed this accident amongst the "Sundries underground," because the heading "By underground fires" is intended specially for accidents due to the burning of timber supports or linings, or to the combustion of the mineral itself.

My list of accidents may be summed up as follows :—

Cause of Accident.	Copper, Lead, Zinc, and other Mines, exclusive of the Slate Mines.			Slate Mines.			Totals for all the Mines.		
	Number of separate accidents.	Number of persons killed.	Number of persons injured.	Number of separate accidents.	Number of persons killed.	Number of persons injured.	Number of separate accidents.	Number of persons killed.	Number of persons injured.
Explosions of firedamp	—	—	—	—	—	—	—	—	—
Falls of ground	2	—	2	11	5	6	13	5	8
In Shafts.									
Overwinding	—	—	—	—	—	—	—	—	—
Ropes or chains breaking	—	—	—	—	—	—	—	—	—
Whilst ascending or descending by machinery.	—	—	—	—	—	—	—	—	—
Falling into shaft from surface	—	—	—	—	—	—	—	—	—
Things falling from surface	—	—	—	—	—	—	—	—	—
Falling from part way down	1	—	1	2	2	—	3	2	1
Things falling from part way down	3	2	1	—	—	—	3	2	1
Miscellaneous in shafts	—	—	—	—	—	—	—	—	—
Total in shafts	4	2	2	2	2	—	6	4	2
Miscellaneous Underground.									
Explosions of gunpowder, &c.	1	—	1	10	—	10	11	—	11
Suffocation by gases	—	—	—	—	—	—	—	—	—
Irruptions of water	—	—	—	—	—	—	—	—	—
Falling into water	—	—	—	—	—	—	—	—	—
On inclined planes	—	—	—	—	—	—	—	—	—
By trams and tubs	1	—	1	—	—	—	1	—	1
By machinery underground	—	—	—	6	—	6	6	—	6
By underground fires	—	—	—	—	—	—	—	—	—
Ropes or chains breaking	—	—	—	3	—	3	3	—	3
Sundries underground	—	—	—	11	2	10	11	2	10
Total miscellaneous underground	2	—	2	30	2	29	32	2	31
On Surface.									
By machinery on surface	1	—	1	4	1	3	5	1	4
Boilers bursting	—	—	—	—	—	—	—	—	—
Miscellaneous on surface	4	—	5	10	—	10	14	—	15
Total on surface	5	—	6	14	1	13	19	1	19
Gross total	13	2	12	57	10	48	70	12	60

The total number of accidents reported is 2 less than in 1893; the number of persons killed is the same, and there is a decrease of of 5 in the number of persons injured.

The causes of the fatal accidents in 1894 may be compared with those of the 19 previous years by the following table :—

GENERAL TABLE OF FATAL ACCIDENTS AND DEATHS AT THE MINES IN DR. C. LE NEVE FOSTER'S DISTRICT FROM 1875* TO 1893.

—	Number of Fatal Accidents. Totals for the 10 years 1875 to 1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	Number of Deaths resulting therefrom. Totals for the 10 years 1875 to 1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Falls of ground	42	8	2	3	6	3	4	2	6	5	5	46	9	2	3	6	3	4	2	7	5	5
In Shafts.																						
Overwinding	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Ropes or chains breaking	1	—	—	1	—	—	1	—	—	—	—	2	—	—	1	—	—	2	—	—	—	—
Whilst ascending or descending by machinery	2	—	—	—	—	2	—	—	—	—	—	2	—	—	—	—	2	—	—	—	—	—
Falling into shaft from surface	2	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—
Things falling from surface	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Falling from part way down	19	—	—	1	—	—	1	1	1	2	2	19	—	—	1	—	—	1	1	1	2	2
Things falling from part way down	7	1	—	—	—	—	—	—	1	—	2	7	1	—	—	—	—	—	—	2	—	2
Miscellaneous in shafts	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total in shafts	32	1	—	2	—	2	2	1	2	2	4	33	1	—	2	—	2	3	1	3	2	4
Miscellaneous Underground.																						
Explosions of gunpowder, &c.	31	—	2	1	1	—	—	1	—	3	—	35	—	2	1	1	—	—	1	—	3	—
Suffocation by natural gases	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Irruptions of water	—	1	—	—	—	—	1	—	—	—	—	—	3	—	—	—	—	3	—	—	—	—
Falling into water	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
On inclined planes	—	1	—	1	—	1	1	1	—	1	—	—	1	—	1	—	1	3	1	—	1	—
By trams and tubs	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
By machinery underground	3	1	1	—	1	1	—	—	—	—	—	4	1	1	—	1	1	—	—	—	—	—
By underground fires	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ropes or chains breaking	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sundries underground	36	1	1	1	2	2	1	2	2	1	1	37	1	1	1	6	2	1	2	2	1	2
Total miscellaneous underground	71	4	5	3	4	4	3	4	2	5	1	77	6	5	3	8	4	7	4	2	5	2
On Surface.																						
By machinery on surface	13	2	—	—	1	1	1	—	1	—	1	13	2	—	—	1	1	1	—	1	—	1
Boilers bursting	1	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—
Miscellaneous on surface	19	1	2	—	1	1	1	—	1	—	—	21	1	2	—	1	1	1	—	1	—	—
Total on surface	33	3	2	—	2	2	2	—	2	—	1	38	3	2	—	2	2	2	—	2	—	1
Gross total	178	16	9	8	12	11	11	7	12	12	11	194	19	9	8	16	11	16	7	14	12	12

* In 1873 and 1874 the accidents in slate mines were not included, and for that reason the statistics for those years are not added to the table. In 1892 Shropshire was removed from the district, and Kent, Middlesex, Surrey, and Sussex were added to it.

The following tables are given, as usual, for the purpose of affording a comparison between the dangers of slate mines and those of other mines :—

TABLE showing the DEATH-RATE FROM ACCIDENTS at the MINES in DR. C. LE NEVE FOSTER'S DISTRICT.

Year.	Persons employed.			Number of Deaths from Accidents.			Death-rate from Accidents per 1,000 Persons employed.		
	Under-ground.	Above Ground.	Total.	Under-ground.	Above Ground.	Total.	Under-ground.	Above Ground.	Total.
COPPER, LEAD, ZINC, and other MINES, exclusive of the Slate Mines.									
*Averages for the 10 years 1875 to 1884.	4,684	3,002	7,686	8·4	1·2	9·6	1·79	0·40	1·24
1885 - - - -	2,322	1,653	3,975	8	1	9	3·44	0·60	2·26
1886 - - - -	2,634	1,882	4,516	1	—	1	0·37	—	0·22
1887 - - - -	2,628	2,075	4,703	3	—	3	1·14	—	0·63
1888 - - - -	2,913	2,239	5,152	3	2	5	1·02	0·89	0·97
1889 - - - -	3,097	2,505	5,602	2	—	2	0·64	—	0·35
1890 - - - -	2,966	2,377	5,343	7	2	9	2·36	0·84	1·68
1891 - - - -	2,861	2,165	5,026	2	—	2	0·70	—	0·40
1892 - - - -	2,383	1,887	4,270	5	1	6	2·09	0·53	1·40
1893 - - - -	1,845	1,508	3,353	6	—	6	3·25	—	1·79
1894 - - - -	1,662	1,398	3,060	2	—	2	1·21	—	0·66
SLATE MINES.									
*Averages for the 10 years 1875 to 1884.	2,248	2,481	4,729	7·2	2·6	9·8	3·20	1·04	2·07
1885 - - - -	2,404	2,414	4,818	8	2	10	3·32	0·82	2·07
1886 - - - -	2,263	2,361	4,624	6	2	8	2·65	0·84	1·73
1887 - - - -	2,224	2,412	4,636	5	—	5	2·24	—	1·07
1888 - - - -	2,119	2,451	4,570	11	—	11	5·19	—	2·40
1889 - - - -	2,155	2,315	4,470	7	2	9	3·24	0·86	2·01
1890 - - - -	2,252	2,173	4,425	7	—	7	3·10	—	1·58
1891 - - - -	1,939	1,999	3,938	5	—	5	2·58	—	1·27
1892 - - - -	2,084	1,959	4,043	7	1	8	3·36	0·51	1·97
1893 - - - -	2,146	2,259	4,405	6	—	6	2·79	—	1·36
1894 - - - -	2,286	2,299	4,585	9	1	10	3·94	0·43	2·18
TOTALS for all the MINES.									
*Averages for the 10 years 1875 to 1884.	6,932	5,483	12,415	15·6	3·8	19·4	2·25	0·69	1·56
1885 - - - -	4,726	4,067	8,793	16	3	19	3·38	0·73	2·16
1886 - - - -	4,897	4,243	9,140	7	2	9	1·42	0·47	0·98
1887 - - - -	4,852	4,487	9,339	8	—	8	1·64	—	0·85
1888 - - - -	5,032	4,690	9,722	14	2	16	2·78	0·42	1·64
1889 - - - -	5,252	4,820	10,072	9	2	11	1·71	0·41	1·09
1890 - - - -	5,218	4,550	9,768	14	2	16	2·68	0·44	1·63
1891 - - - -	4,800	4,164	8,964	7	—	7	1·46	—	0·78
1892 - - - -	4,467	3,846	8,313	12	2	14	2·68	0·52	1·68
1893 - - - -	3,991	3,767	7,758	12	—	12	3·00	—	1·54
1894 - - - -	3,948	3,697	7,645	11	1	12	2·79	0·28	1·57

* The details for each of the 10 years will be found in the "Reports of the Inspectors of Mines for the year 1884," p. 206.

The general results for 1894 may be summed up as follows :—The death-rate from accidents at ore mines, 0·66 per 1,000 persons employed, is very low ; the death-rate at the slate mines, 2·18 per 1,000, is higher than usual ; and the general death-rate for the district, 1·57 per 1,000, is slightly less favourable than the average of the last 19 years.

In describing each non-fatal accident I have stated the nature of the injury and the length of time the person was disabled. The general results are summed up in the two following tables:—

SUMMARY of NON-FATAL ACCIDENTS reported in 1894 arranged according to Degree of Injury and Age of Person Injured.

Nature of Injury.	Underground.			Above Ground.			Total Number of Persons Injured.
	Ages.			Ages.			
	11–13.	13–18.	Above 18.	11–13.	13–18.	Above 18.	
Loss of right hand or arm	—	—	—	—	—	—	—
" left " "	—	—	—	—	—	—	—
" part of right hand	—	1	2	—	1	2	6
" " left "	—	—	2	—	—	1	3
" any part of leg or foot	—	—	2	—	—	2	4
Fracture of limbs or bones of trunk	—	—	6	—	1	3	10
" hand or foot	—	—	2	—	—	—	2
Loss of sight of one or both eyes	—	—	2	—	—	—	2
Injuries to head and face	—	—	12	—	—	5	17
Burns or scalds	—	—	1	—	—	1	2
Lacerations, contusions, and other injuries not enumerated	—	—	11	—	—	3	14
Totals	—	1	40	—	2	17	60

SUMMARY of NON-FATAL ACCIDENTS reported in 1894 arranged according to Period of Disablement.

Period of Disablement.	Number of Persons injured.	Percentage of Total Number.
1 week or less	2	3·3
1 to 2 weeks	4	6·7
2 weeks to 1 month	8	13·3
1 month to 3 months	30	50·0
3 months to 6 months	7	11·7
More than 6 months	2	3·3
Uncertain, but exceeding 3 months	6	10·0
Permanently disabled	1	1·7
	60	100·0

CHAPTER IV.—PROSECUTIONS: BRYN DYFI, BRYN-Y-CANIADAU, MAESMAWR, MOEL ISPRI, VOTTY and BOWYDD.—PROCEEDINGS AGAINST WORKMEN.

Most of the prosecutions instituted by me under your instructions related to breaches of the statutory regulations concerning the fencing of shafts.

The particulars are summed up briefly as follows:—

Name of Mine.	Description of Offender.	Contraventions of 35 & 36 Vict. c. 77.	Result of Trial.	Penalty.	Costs.
				£ s. d.	£ s. d.
Bryn Dyfi	Person interested in the mineral.	Section 13. Unfenced shafts.	Conviction	0 7 0	13 4 0
Bryn-y-Caniadau	" "	" "	"	0 1 0	5 0 0
Maesmawr	Owner	" "	Information dismissed.	—	—
Moel Ispri	"	Section 23 (6). Unfenced shaft.	Conviction	0 1 0	1 0 0
	"	Section 28. No abstract posted up.	"	0 1 0	1 0 0
Votty and Bowydd	First agent	Section 23 (7). Unfenced shaft.	"	1 0 0	0 11 4
	Second agent	"	"	1 0 0	0 11 4
	Owner	" "	Information dismissed.	—	—
			Totals	2 10 0	21 6 8

Bryn Dyfi.—Want of attention to a notice in writing led to this prosecution. In September 1893 I wrote to Colonel George Williams, agent to Sir Pryse Pryse, asking him to fence some abandoned mine shafts. After the lapse of some months, I found that nothing had been done, so I felt bound to report the matter to you with a view to legal proceedings. Sir Pryse Pryse was not hardly dealt with when the matter came before the magistrates.

Bryn-y-caniadau.—This is another case in which the owner of mineral property had to suffer for the neglect of his steward.

In September 1885 I sent a notice in writing to Mr. McIntyre, the agent of Lord Willoughby de Eresby (now Lord Ancaster), begging him to fence the shafts at this mine, which had been abandoned for some years. The notice was obeyed, but, for the sake of saving a little money, timber railings were erected instead of substantial walls. As might have been expected, the timber became rotten, and complaints reached me that the fences were in a dilapidated condition. Knowing that Mr. McIntyre lived in the neighbourhood, and that his workmen were constantly going about all over the Gwydyr Estate, I felt that the want of repair of the fences ought not to have escaped his attention. I had no hesitation in asking your permission to take legal proceedings against Lord Ancaster, in order to convince owners of mining property that it is their duty not only to erect fences to shafts, but also to keep them in good repair. As in the previous prosecution, it seemed to me somewhat hard to press the case strongly against the owner of the property, when the real culprit was the steward. I regret greatly that the Act does not prohibit fences made of timber; if it were to prescribe a substantial fence of more lasting material, such as a wall of brick or stone built with mortar, the danger to the public from fences becoming rotten and useless would be avoided.

Maesmawr.—The circumstance which led to this prosecution was the death of a man from falling down an unfenced mine shaft.

William Williams, a farmer, 38 years of age, left a public-house in Dolgelley at 11 p.m. one night, and, after walking 3 miles with a companion, started up a rough hillside alone in order to go up to Hafod-y-fedw farm-house. Three days afterwards his body was found at the bottom of an old mine shaft about 27 feet deep, with 5 ft. 8 in. of water in it. The shaft was within 40 yards of the main footpath up the hillside and within one yard of a track occasionally used by persons living at Hafod-y-fedw. Though the shaft was well known to William Williams and the inmates of the farm, scarcely any one else seems to have been aware of its existence. The agent of the owner of the surface had never heard of it; persons who had shot rabbits upon the land year after year were equally ignorant, and no one had ever complained of it in any way, or brought it to the knowledge of any person who could have remedied the evil.

The minerals at Maesmawr belong to the Crown, and the mine had been abandoned about 26 years ago. On the passing of the Metalliferous Mines Act in 1872, it became the duty of the Crown authorities to fence the shaft and keep it fenced; and a like liability rested upon the Crown lessees. It cannot be denied, therefore, that the shaft ought to have been fenced years ago; but though it is no part of my duty to plead the cause of the Office of Woods and Forests, the Department which has the control of Crown lands, I must remark in common fairness that none of the present officers of the Department knew of the shaft. If the inhabitants of a district are so callous to the existence of dangerous pitfalls that they make no complaint to the authorities, they cannot expect much sympathy when an accident happens. The path was not a public one, and was simply a track for going from the farm to a cowhouse. Even if there had been no shaft, I should have considered a man unwise to start up the rough hillside on a pitch dark night without a lantern, when there was no pressing necessity. My assistant and I failed at first to find the proper track to the farm in broad daylight. No evidence was given to the effect that the man was in liquor at the time that he fell into the shaft; his companion who accompanied him from the public-house to the foot of the hillside said: "When I left him he was quite able to take care of himself, as regards being sober."

As a life had been sacrificed from a breach of the Act, I thought it my duty to call your attention to the matter, and ask your permission to bring the case before the local magistrates. Proceedings were instituted against Mr. Turner, who had taken a lease of Maesmawr Mine shortly before the accident. The chairman of the bench, after a patient hearing lasting more than three hours, announced as the decision of the majority "Information dismissed," without stating any reasons for the dismissal. The lessee's solicitor based his defence upon the ground that the track near the shaft was a private and not a public footpath. Whether the bench were in any way influenced in their decision by this, I am unable to say; it is more probable that they considered it hard that a private individual, who had only recently taken a lease of the

property, should be prosecuted for having failed to do what the Crown authorities themselves had left undone for more than 20 years.

Moel Ispri.—Work was resumed at this mine in September 1893; but no notice was sent to me because fewer than 12 persons were employed. I ought, however, to have become aware of the resumption of work by receiving the statutory annual return from the owner in January 1894. Though well accustomed to mining, Mr. Roberts, the owner, failed to send me any such return, and it was by pure chance that the fact of his working the mine came to my knowledge. I at once visited the mine, and found that a dangerous shaft was almost entirely unfenced, and that no Abstract was displayed as required by the Act. When the case came on for hearing, Mr. Roberts' solicitor made a very plausible excuse as regards the fencing, which no doubt had its effect upon the bench. He said that when his client took a lease from the Crown, he went over the property with the local agent of the Office of Woods and Forests, and received the shaft in precisely the condition it was in when I made my complaint. The solicitor argued, with much show of reason, that his client supposed that when an officer of the Crown gave him possession, all requirements concerning fencing had been properly complied with. At first sight it does seem hard that the new owner of a property should be prosecuted by an officer of the Crown for something which another officer of the Crown, but under a different department, had apparently not considered to be neglect. Looking at the matter from this point of view, I have no reason to quarrel with the bench for the nominal fine which was inflicted.

This case was heard a few days before the accident at Maesmawr.

Votty and Bowydd.—In 1892 I took proceedings against the owner and agent of this mine for neglecting to fence a dangerous precipice, the edge of part of the quarry which had been worked open. The fence was then improved a little, but never reconstructed in a really permanent manner. It consisted of posts about 3 feet high, with two lines of old wire rope stapled to them. As might have been expected, such a fence did not stand very long, and finding last April that it was broken down in more than one place, I obtained your permission to prosecute. The chairman of the bench on fining both the agents 1*l*. each, said that he and his colleagues were of opinion that the fence should be a dry stone wall 3 ft. 6 in. high above the coping, which should be from 6 to 8 inches high, and so give a total height of 4 ft. to 4 ft. 2 in. The bench gave no reason for not convicting the company, as owner, although on the previous occasion the company were duly fined.

Some of the prosecutions were conducted by Mr. J. P. Cartwright, of Chester, and others by Mr. R. Mostyn Roberts, of Carnarvon.

Prosecutions of workmen.—The Metalliferous Act contains no clause like that of the Coal Mines Act, which compels the owner of a mine to send notice to the Inspector of prosecutions instituted by him against workmen. My list of such prosecutions may, therefore, be imperfect; only two cases were reported to me, as follows:—

Name of Mine.	Number of Workmen.	Contravention of 35 & 36 Vict. c. 77.	Result of Trial.	Penalty.	Costs.
				£ s. d.	£ s. d.
New Welsh Slate -	3	Breach of Special Rule 45; riding up an incline.	Conviction -	0 1 0 (each)	0 2 6 (each)
Talacre -	1	Section 23 [19]; rendering two safety-valves inoperative by wedging the levers fast with nails.	Conviction -	1 0 0	0 10 6

CHAPTER V.—GENERAL REMARKS: SPECIAL RULES. EXEMPTIONS UNDER THE SLATE MINES (GUNPOWDER) ACT. ABANDONED MINES. NEW MINES. QUARRIES ACT. ASSISTANT INSPECTORS. SUMMARY OF WORK.

Special Codes.—My new list of mines will record the date of the establishment of Special Rules in each particular case, so that I need no longer make any statements about them in this part of my Report.

Exemptions under the Slate Mines (Gunpowder) Act.—In obedience to section 2 (4) of the Slate Mines (Gunpowder) Act, 1882, I have the honour to report that last year there were five slate mines holding exemptions from section 23 (2) (*a*), (*b*) and (*c*) of the

Metalliferous Mines Regulation Act 1872, viz., Aberllefenny, Llechwedd, New Welsh Slate, Oakeley, Votty and Bowydd.

Abandoned Mines.—I have removed from my list, &c. names of the following mines, which are, or appear to be, finally abandoned:—

Cardiganshire: Bodcoll, Glan Castell, Gothic.
Carnarvonshire: Nant.
Denbighshire: Tynyddol.
Flintshire: Black Mountain, Glyndwr, Great Calcot, Hopeful, Lisbon, Lloc, Nant, Penmachno, True Blue, Wallside, West Pant-y-go.
Merionethshire: Dolgoed, Llanaber.
Montgomeryshire: Van Consols.
Surrey: Silver Sand pit.
Isle of Man: Dalby.

Mines started.—Work has been commenced or resumed at the following mines:—

Carnarvonshire: Coed Mawr Pool.
Flintshire: Freehold, North Halkyn.
Merionethshire: Caegwernog, Figre, Moel Ispri.
Surrey: Brockham.

Quarries Act.—The Quarries Act of last year has thrown upon me new responsibilities. It is now my duty to inspect every openwork in my district any part of which is more than 20 feet deep, this being the limit fixed by the new Statute.

The following list shows approximately the number of quarries which now come under my inspection:—

County.	Number of Open Quarries.
ENGLAND.	
Kent - - - -	94
Middlesex - - - -	12
Surrey - - - -	21
Sussex - - - -	88
Total - -	215
WALES.	
Anglesey - - - -	5
Breconshire - - - -	27
Cardiganshire - - - -	43
Carnarvonshire - - -	52
Denbighshire - - - -	55
Flintshire - - - -	58
Merionethshire - - - -	20
Montgomeryshire - - - -	19
Radnorshire - - - -	26
Total - -	305
ISLE OF MAN - -	43
Total for the District -	563

Assistant Inspectors.—In order to enable me to cope with the great amount of additional work which the enforcement of the Quarries Act will entail, you were pleased on 28th July last to appoint and place under my charge two assistants, Mr. Griffith J. Williams and Mr. Owen Rowland Jones. With your approval, the former is stationed at Bangor, and the latter at Chester. They both commenced their duties on the 8th August.

Summary of Work.—Since their appointment my assistants have travelled 8,989 miles, viz., 8,342 by rail, 150 by sea, and 1,097 by road, making altogether 501 visits to mines and quarries.

During the year I travelled 9,806 miles upon official business, viz., 8,820 by rail, 450 by sea, and 536 by road.

Much of my time was taken up by the work of two Departmental Committees, one upon Mining and Mineral Statistics, the other upon the Merionethshire Slate Mines, of both of which I was chairman. The committees have presented their reports.

I have, &c.

C. LE NEVE FOSTER.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall, London.

Reports of Assisting Inspectors.

Bangor,
15th February, 1895.

Sir,

In obedience to section 20 of the Metalliferous Mines Act, 1872, I have the honour to report that since the 8th August last I have discharged the duties of an Inspector of Mines in the North Wales, &c., district; in so doing I have acted as assistant to, and under the direction of, Dr. Le Neve Foster, the Chief Inspector of that district.

I have, &c.
Your obedient servant,
G. J. WILLIAMS.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

Chester,
15th February, 1895.

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I have, &c.
Your obedient servant,
OWEN R. JONES.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department.

MINES.

REPORT

OF

FRANK N. WARDELL, Esq., H.M. INSPECTOR OF MINES

FOR THE

YORKSHIRE AND LINCOLNSHIRE DISTRICT (No. 5)

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887,
the Metalliferous Mines Regulation Acts, 1872 and 1875,
and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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1895.

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Mr. Wardell's Report.

REPORT on the WORKING of the MINES REGULATION ACTS in the YORKSHIRE and LINCOLNSHIRE DISTRICT during the Year ended 31st December 1894. —By FRANK N. WARDELL, Esq., F.G.S.

SIR, Wath, 1895.

I have the honour to present to you my Annual Report as Inspector of Mines in charge of the Yorkshire and Lincolnshire District.

The loss of life last year amounted to 100, the result of 97 separate accidents. In 1893 74 accidents caused 218 deaths.

No calamitous disaster of appalling magnitude, such as had to be described and chronicled in the previous year, has, I am thankful to say, to be recorded in this Report. From such, this district has providentially been spared, and to secure a continued freedom from like grievous calamities the best and united efforts of all should be continuously directed.

Although there were 23 more accidents in 1894 than in 1893, and 118 fewer deaths, I prefer to disregard the year 1893 for purposes of comparison altogether, and to take the next preceding year, 1892—two exceptional occurrences in 1893, the one a terrible explosion, involving the loss of 139 lives, the other a lamentable dispute which closed the collieries for four months, render any comparison of the different tables and proportions between this and any other year of no practical value.

In 1892 then, the number of accidents was 76 and the deaths 83. In 1894 these numbers were 97 and 100 respectively, or an increase of 21 accidents and 17 deaths.

An accident at Messrs. Bowers' Alderton Main Colliery, near Leeds, from explosion of gas caused the deaths of three persons, and I am glad to be able to add that this is the only fatality from this cause during the year.

Only one other accident involved the loss of more than one life, and that took place in a sinking shaft at Glas Houghton Colliery, near Pontefract, when two men were killed, owing to the falling of the shaft lining. A single death in each of the remaining 95 accidents was the result.

Under the head of "falls of roof and sides" is always to be found—but for the exceptional occurrence of a heavy explosion—the most prolific total of the mortality columns, and the year under report forms no exception, for 56 separate accidents produced the same number of deaths. 56 per cent. of the total loss of life is very high indeed. The number killed by falls in 1892 was 45. The total was equalled in the years 1889 and 1886, and exceeded in 1887, 1884, 1882, 1880, 1877, and 1875.

In shafts there were nine deaths, resulting from eight separate accidents, as compared with five accidents causing five deaths in 1892.

Under the head of deaths from miscellaneous causes underground, 18 deaths produced by 18 accidents have to be recorded. In 1892 the number of accidents was the same, but the deaths amounted to 23.

On the surface 14 accidents, resulting in the same number of deaths, exhibits much too high a rate, and exceeds that in 1892, when nine accidents caused nine deaths. In that year, however, deaths occurring on private branch railways and in washing and coking coal were not included.

Although many collieries, more particularly in the northern portion of the West Riding, were not working more than three or four days a week during part of the year, yet there was in 1894 an increase in the amount of mineral produced over the year 1892.

In that year the amount of coal raised was 23,185,508 tons, and in 1894 it was 23,442,174 tons, showing an increase of 256,666 tons.

The quantity of fireclay produced in 1892 was 243,101 tons. In 1894 it amounted to 270,720 tons, which is an increase of 27,619 tons.

The production of ironstone in 1892 was 186,113 tons, whilst the amount raised in 1894 was 188,061 tons, representing an increase of 1,948 tons.

In 1892 the total output of shale and other minerals was 94,350 tons, as compared with 68,810 tons in 1894, showing a decrease of 25,540 tons.

It will be seen, therefore, that the total output of mineral in the year 1892 being 23,709,072 tons, and the total quantity in 1894, 23,969,765 tons, there is an increase in the latter year of 260,693 tons.

There were 89,046 persons employed above and below ground in the production of the minerals in 1892, and in 1894 this total was 91,154, an increase of 2,108 persons.

In 1892 and 1894 the totals of persons thus employed in the kingdom were 683,642 and 705,240 respectively, showing an increase of 21,598 persons.

The total amount of mineral raised in the kingdom in 1892 was 191,954,908 tons, and in 1894, 199,451,018 tons, or an increase of 7,496,110 tons in 1894.

The number of lives lost in and about mines in the kingdom during 1892 and 1894 was 1,016 in the former and 1,127 in the latter year.

From the above statistics it will be found that in 1894 there was a proportion of one death to every 626 persons employed, and 176,975 tons produced in the whole kingdom.

In this district the proportions exhibit one death to every 911 persons employed, and 239,697 tons produced.

I append a table showing the per-centages of the total mortality in this district under the different columns from the year of my appointment (1867) up to and including 1894:—

From explosions of firedamp	17·92	per cent.
From falls of roof and sides	45·34	,,
In shafts	9·54	,,
From miscellaneous causes underground	17·23	,,
On the surface	9·97	,,
	100·	

Below is shown the rate of production in this district, per person employed in each year since and including 1880:—

In 1880, 296 tons of mineral raised per person employed.
,, 1881, 309 ,, ,, ,,
,, 1882, 309 ,, ,, ,,
,, 1883, 317 ,, ,, ,,
,, 1884, 308 ,, ,, ,,
,, 1885, 298 ,, ,, ,,
,, 1886, 301 ,, ,, ,,
,, 1887, 307 ,, ,, ,,
,, 1888, 313 ,, ,, ,,
,, 1889, 320½ ,, ,, ,,
,, 1890, 297 ,, ,, ,,
,, 1891, 284 ,, ,, ,,
,, 1892, 273½ ,, ,, ,,
,, 1893, 184⅔ ,, ,, ,,
,, 1894, 263 ,, ,, ,,

Summary of separate Fatal Accidents in the Yorkshire and Lincolnshire District during the year ending 31st December 1894.

Explosions of firedamp	1
Falls of roof and sides	56
In shafts	8
Miscellaneous underground	18
On the surface	14
Total	97

SUMMARY of Lives lost in the above Accidents.

Explosions of firedamp	3
Falls of roof and sides	56
In shafts	9
Miscellaneous underground	18
On the surface	14
Total	100

DEATHS from Shaft Accidents.

Whilst ascending or descending by machinery	2
Falling from part way down	2
Lining of sinking shaft gave way	2
Crushed by cage	2
Whilst drilling hole in sinking shaft	1
Total	9

DEATHS from Miscellaneous Causes Underground.

Suffocation by gases	1
On inclined and engine planes	4
By trams and tubs	7
By ropes and chains breaking	1
Injured by lifting a tub	1
Crushed against a prop	1
Injured by water barrel	1
Struck by falling prop	1
Struck by crab handle	1
Total	18

DEATHS on the Surface.

By machinery	2
Run over or crushed by waggons on railways and tramways	9
Fell through bottom door of a waggon at coal crushing apparatus	1
Crushed against pillar at screens	1
Fell off waggon at screens	1
Total	14

MONTHLY STATEMENT of DEATHS caused by ACCIDENTS in the MINES of the YORKSHIRE AND LINCOLNSHIRE DISTRICT during the year 1894.

Month.	Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	On the Surface.	Total.
January	—	4	1	2	1	8
February	—	2	—	3	2	7
March	—	4	—	—	4	8
April	—	2	2	—	—	4
May	3	8	1	1	—	13
June	—	3	—	—	3	6
July	—	6	2	2	—	10
August	—	10	1	2	1	14
September	—	3	—	3	1	7
October	—	3	—	1	1	5
November	—	4	2	2	1	9
December	—	7	—	2	—	9
Total	3	56	9	18	14	100

The following TABLE shows the number of DEATHS from VARIOUS CAUSES during the last 27 years in this District.

Nature of Accident.	Deaths.												
	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
Explosions of firedamp -	6	1	11	10	45	12	30	162	3	3	4	31	11
Falls of roof and sides -	36	41	46	42	43	52	49	62	37	59	40	41	64
In shafts - - -	11	7	14	13	14	18	8	11	9	19	5	14	6
Miscellaneous underground	13	15	14	12	28	15	10	21	8	11	22	17	19
On the surface - -	14	5	5	7	3	18	15	11	14	15	10	11	6
Totals of lives lost -	80	69	90	84	133	115	112	267	71	107	81	114	106
Totals of accidents -	77	62	83	80	96	105	88	105	71	100	77	77	95

Nature of Accident.	Deaths.														
	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	Total.
Explosions of firedamp -	1	8	20	1	2	23	—	4	2	2	2	1	142	3	540
Falls of roof and sides -	40	57	48	58	46	56	74	53	56	48	42	45	37	56	1,328
In shafts - - -	8	4	6	11	7	17	6	6	6	9	18	5	9	9	270
Miscellaneous underground	17	13	20	18	26	22	23	18	30	29	28	23	12	18	502
On the surface - -	9	13	15	9	4	13	8	7	12	14	9	9	18	14	288
Totals of lives lost -	75	95	109	97	85	131	111	88	106	102	99	83	218	100	2,928
Totals of accidents -	75	87	89	94	84	100	107	85	101	99	89	76	74	97	2,373

TABLE showing the Number of Deaths, the Amount of Mineral raised, and the Number of Tons of Mineral raised for each Death during the 23 years ending 31st December 1894.

Year.	Number of Deaths.	Amount of Mineral raised.	Tons of Mineral raised for each Death.
1872 - -	133	14,576,000	109,594
1873 - -	115	15,311,778	133,146
1874 - -	112	15,221,909	135,910
1875 - -	267	16,395,503	61,406
1876 - -	71	15,717,143	221,227
1877 - -	107	16,370,842	152,999
1878 - -	81	16,188,179	199,854
1879 - -	114	16,710,255	146,581
1880 - -	106	17,969,974	169,528
1881 - -	75	18,793,831	250,584
1882 - -	95	19,078,852	200,830
1883 - -	109	20,120,256	184,589
1884 - -	97	19,748,234	203,590
1885 - -	85	18,964,370	223,110
1886 - -	131	19,818,077	151,283
1887 - -	111	20,545,900	185,098
1888 - -	88	20,956,481	238,142
1889 - -	106	22,457,749	211,866
1890 - -	102	22,819,630	223,722
1891 - -	99	23,313,506	234,722
1892 - -	83	23,709,072	285,651
1893 - -	218	16,383,309	75,153
1894 - -	100	23,969,765	239,697

The following TABLE is of interest as showing comparisons between this District and the whole Kingdom.

	1894.	1893.	Increase, 1894.	Decrease, 1894.
Total number of mines in the kingdom -	3,419	3,383	36	—
Average number of mines for each district -	285	282	3	—
Actual number of mines in Yorkshire and Lincolnshire.	421	424	—	3
Total number of persons employed in mines in the kingdom.	705,240	683,008	22,232	—
Average number of persons employed in mines in each district.	58,770	56,917	1,853	—
Actual number of persons employed in mines in Yorkshire and Lincolnshire.	91,154	88,699	2,455	—
Total amount of mineral produced in the kingdom.	199,451,018	175,236,857	24,214,161	—
Average amount of mineral produced in each district.	16,620,918	14,603,071	2,017,847	—
Actual amount of mineral produced in Yorkshire and Lincolnshire.	23,969,765	16,383,309	7,586,456	—

LIST of COLLIERIES where FATAL ACCIDENTS have

Owner's Name.	Name of Colliery.	Deaths.						
		1868.	1869.	1870.	1871.	1872.	1873.	1874.
Earl Fitzwilliam - - -	Elsecar Collieries -	2	1	1	2	3	2	—
John Brown and Co. - - -	Aldwarke Main -	1	—	1	2			
	Car House - -	2	1	1	3	3	3	4
	Rotherham Main -	—	—	—	—			
T. M. Carter and Co. - -	Allerton Bywater -	2	1	—	—	1	—	—
Farnley Iron Co. - - - -	Farnley - -	3	—	—	—	1	2	—
Newton, Chambers, and Co. -	Thorncliffe&Rockingham	1	1	4	4	2	3	2
Cliffe Coal and Fire Clay Co. - -	Hollingthorpe - -	1	—	1	—	1	—	—
Lundhill Coal Co. - - -	Lundhill - -	1	—	2	1	4	1	1
Jeffcock and Dunn - - -	Carbrook - -	1	1	—	—	—	—	—
J. and J. Charlesworth's Collieries -	- - - -	6	2	—	4	2	5	26
Isaac Wood and Son - -	Dean Lane and Harrop Edge - -	1	—	—	1	1	—	—
Sturges and Co. - - - -	New Gawber Hall -	1	1	—	—	—	1	—
R. M. and Holmes Co. - -	Holmes - -	3	1	3	3	1	1	1
Thrybergh Hall Co. - - -	Thrybergh Hall -	1	—	—	—	—	—	—
B. Huntsman - - - - -	Tinsley Park -	3	4	5	1	—	—	2
Hird, Dawson, and Hardy - -	Low Moor - -	2	2	—	1	2	5	3
D. Wroe and Co. - - - -	Heckmondwike -	2	—	—	1	—	—	—
	Waterloo - -							
New Sharlston Coal Co. - -	Sharlston - -	1	1	—	2	1	2	1
Rothervale Coal Co. - - -	Fence - - -	1	—	2	2	1	1	—
	Orgreave - -							
	Treeton - -							
Greenhough and Co. - - -	Adwalton - -	1	—	—	—	—	—	—
Lord St. Oswald - - -	Nostell - -	1	—	—	1	—	—	—
Monk Bretton Coal Co. - - -	Monk Bretton - -	1	—	1	1	1	1	1
J. Haigh - - -	Victoria, Morley -	1	—	2	—	—	—	—
Pope and Pearson - - -	West Riding & Silkstone	1	2	1	1	4	4	—
Wombwell Main Co. - - -	Wombwell Main -	2	2	3	3	1	—	2
W. Ingham and Sons - - -	Wortley - -	1	—	—	—	—	—	—
Edmunds and Swaithe Main Co. -	Swaithe Main -	1	1	1	1			
	Edmund's Main -	—	—	1	1	2	1	3
Mitchell and Co. - - - -	Mitchell Main - -	—	—	—	—	—	—	—
Victoria Coal and Coke Co. - -	Stanley - -	2	2	—	1	—	2	2
	Park Hill - -							
Silkstone Fall Co. - - -	Silkstone Fall - -	1	1	—	—	—	—	—
T. & R. W. Bower - - -	Allerton - - -	3	—	—	—	3	1	1
Manston Coal Co. - - -	Manston - -	2	2	—	1	1	1	—
Kiveton Park Coal Co. - - -	Kiveton Park - -	1	1	—	2	3	1	3
Leather and Littlewood - -	Ellis Laith - -	1	—	—	—	—	—	—
Skinner and Holford - - -	Waleswood - -	1	—	2	2	3	—	1
Bowling Iron Co. - - -	Bowling - -	2	1	3	—	—	—	1
H. Briggs, Son, and Co. - - -	Whitwood - -	1	—	2	—	2	6	3
A. Harding and Co. - -	Beeston Manor -	1	1	—	—	1	—	—
J. Jackson - - - -	Great Gomersal -	1	—	—	—	—	—	—
J. T. Leather - - - -	Waterloo Main -	1	1	1	—	—	1	1
W. Ackroyd and Bros. - -	Morley Main - - -	1	—	—	—	36	—	—
G. and J. Haigh - - - -	Ravensthorpe -	2	—	1	1	1	1	1
	Alverthorpe - -							
	Dewsbury Moor -							
Wharncliffe Silkstone Co. - -	Wharncliffe Silkstone -	1	1	1	—	1	1	1
West Yorkshire Iron and Coal Co. -	West Ardsley - -	1	1	1	1	1	1	2
E. Sutcliffe and Co. - -	Victoria - -	1	—	—	—	—	1	—
J. Baistow - - - - -	Norwood Green -	1	—	—	—	—	—	—
Blacker Main Co. - - -	Blacker Main - -	2	1	2	—	1	—	1
G. Bailey - - - - -	St. John's - -	1	—	—	1	—	—	1
Samuel Fox and Co. - -	Stocksbridge - -	1	—	—	—	1	—	—
Woolley Coal Co. - - - -	Woolley - -	1	3	2	2	—	4	1
Hoyland Silkstone Coal Co. - -	Hoyland Silkstone -	1	—	—	1	1	—	—
Howley Park Co. - - - -	Howley Park - -	1	—	—	—	—	—	—
Locke and Co. - - -	St. John's - -	1	—	3	1	2	—	3
	Kippax - -							
Staveley Coal and Iron Co. - -	North Staveley -	1	—	—	—	1	1	—
Garforth Coal Co. - - -	Garforth - -	1	1	—	1	—	2	—
Asquith Bros. - - -	Howden Clough -	1	—	—	—	1	1	—
W. Day - - - - -	Mount Osborne -	1	2	5	2	4	2	3
J. Rhodes - - - - -	Woodthorpe - -	—	1	1	—	—	1	—
G. A. Haworth and Co. - -	Silkstone Main -	—	1	—	—	—	3	1
Norwegian Titanic Co. - - -	Neville Hill - -	—	1	—	—	—	—	1
C. Cammell and Co. - -	Oaks - - -	—	2	2	3	1	5	4
R. C. Clarke - - - - -	Old Silkstone - -	—	1	—	—	—	—	2

occurred in the Years 1868 to 1894 inclusive.

Deaths.

1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	Total.
—	2	2	3	1	3	3	2	—	5	1	2	1	2	1	—	2	—	1	—	42
9	2	—	1	3	2	—	1	2	3	8	2	5	1	3	7	8	2	5	4	89
—	—	—	—	—	2	1	1	1	—	—	1	—	—	—	1	3	1	—	1	16
—	—	1	—	—	—	—	1	1	—	—	—	—	1	—	—	—	—	—	—	10
3	4	2	1	3	5	2	3	3	3	3	4	6	6	4	5	4	6	3	2	89
—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	4
2	2	2	1	1	1	1	1	—	—	—	1	—	—	—	—	—	—	—	—	22
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
3	2	1	5	2	2	1	3	2	2	2	1	2	5	5	3	2	2	4	3	97
—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	4
—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
3	—	5	1	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	24
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
4	2	2	1	—	2	—	2	—	—	1	—	1	1	1	—	1	2	1	4	40
1	3	3	2	1	1	2	2	1	1	1	1	3	—	1	1	1	—	2	—	42
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
—	2	1	1	2	2	2	1	3	1	1	3	2	1	—	1	1	2	4	2	40
3	1	3	1	—	—	—	1	1	—	3	2	7	2	1	3	1	3	3	6	48
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	1	—	2	—	—	—	4	1	1	—	3	14
—	—	5	1	2	1	2	1	3	2	2	—	3	4	2	1	1	2	3	3	44
—	—	1	1	1	1	—	8	—	1	—	—	—	—	—	—	1	—	—	1	18
2	1	—	1	2	—	3	3	1	1	3	24	—	—	—	2	4	1	—	—	61
—	1	1	—	—	2	2	—	1	—	—	2	1	—	3	—	—	1	2	—	29
—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	2
146	—	—	1	—	1	2	2	—	2	—	—	1	—	1	1	1	—	—	—	170
—	—	1	—	—	1	—	—	2	—	2	4	1	3	4	1	1	—	1	—	21
6	—	5	3	23	4	—	2	2	2	4	3	5	2	1	3	1	2	1	1	79
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	3	—	—	3	1	3	2	3	1	—	3	1	4	2	1	—	—	4	39
—	1	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10
2	3	—	—	—	5	2	1	1	1	3	2	1	2	4	1	—	—	1	1	41
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
2	1	—	—	—	2	1	1	—	1	1	4	—	1	1	—	1	1	—	—	26
5	2	3	2	2	—	—	2	—	—	2	—	3	—	—	2	—	—	—	1	31
10	1	4	1	5	2	4	2	1	2	3	5	1	1	4	3	1	—	6	—	70
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	1	—	—	1	—	—	1	1	1	1	—	3	1	—	—	—	—	3	18
—	1	—	1	1	—	1	—	2	1	1	1	1	1	1	3	2	—	—	1	55
2	—	—	2	—	1	1	1	—	1	1	—	—	1	—	1	—	6	1	—	25
—	2	—	—	1	—	—	—	2	1	2	3	5	3	1	—	—	1	—	1	28
3	2	—	1	1	—	—	—	1	1	—	2	—	1	1	—	2	—	—	—	23
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
1	—	2	—	—	—	1	1	—	—	—	1	—	—	—	—	—	—	—	—	13
—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	3
—	—	—	2	—	1	—	—	—	1	1	1	1	—	2	—	3	1	—	2	28
1	—	1	1	1	3	1	2	4	2	1	1	1	—	3	5	—	—	—	4	34
—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	1	—	1	—	5
2	—	3	—	—	1	1	5	2	2	1	1	—	4	4	—	—	3	—	1	40
1	—	—	—	1	—	—	—	—	—	—	2	—	—	—	1	2	1	—	—	11
—	2	—	—	—	1	2	—	—	2	—	—	1	—	—	—	2	—	1	—	16
—	—	—	1	1	—	—	—	—	—	—	—	1	—	1	—	1	1	—	—	9
2	1	2	1	—	1	—	2	—	—	—	—	—	—	—	—	—	—	—	—	28
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7
—	—	1	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	5
4	—	2	—	4	4	4	—	1	5	—	—	1	—	3	2	2	—		1	52
1	—	—	—	—	3	—	—	—	—	—	—	—	—	1	—	—	1		—	9

List of Collieries where Fatal Accidents

Owner's Name.	Name of Colliery.	Deaths. 1868.	1869.	1870.	1871.	1872.	1873.	1874.
Thorp's Gawber Hall Co.	Thorp's Gawber Hall	—	1	1	1	—	3	1
Darfield Main Co.	Darfield Main	—	3	3	1	2	1	1
Wheldale Coal Co.	Wheldale	—	1	—	2	—	2	2
R. Craik and Co.	East Gawber Hall	—	2	2	1	1	5	3
Seth, Senior, and Sons	Box Ings	—	1	—	—	—	—	—
Lodge, Webster, and Scott	Healey	—	1	—	—	—	—	—
G. Watkinson and Sons	Darton	—	1	—	—	—	—	—
Townend Bros.	Denholm	—	1	—	—	—	—	—
Denaby Main Co.	Denaby Main	—	3	4	2	5	1	2
Rhodes and Dalby	Snydale, Sykes, Prince of Wales	—	2	4	1	5	—	—
John Holmes	Churwell	—	1	—	—	—	—	—
Manvers Main Co.	Manvers Main	—	2	—	1	1	2	—
Stansfeld and Co.	Flockton	—	2	—	—	—	—	—
Haynes and Co.	Hall Royd	—	1	1	—	—	—	—
Strafford Main Co.	Strafford Main	—	—	1	1	1	—	—
Hargreaves and Naylor	Whinney Moor and Pildacre	—	—	1	—	—	—	—
Chas. Wheatley's Collieries	Bradley Wood, &c.	—	—	1	—	—	—	—
Hepworth Iron Co.	Wood	—	—	1	—	—	—	—
John Cawthera	Four Lane Ends	—	—	2	—	—	—	—
W. Wood & Sons	Foxholes	—	—	2	—	—	—	—
J. Marsland	Providence	—	—	1	—	—	—	—
Messrs. Greaves	White Hill	—	—	1	—	—	—	—
E. Heeley	Lane End	—	—	1	—	—	—	—
Chickenly Heath Co.	Chickenly Heath	—	—	1	—	—	—	—
Cooper, Sellars, and Co.	Roundwood	—	—	1	—	—	—	—
E. Ingham	Thornhill	—	—	1	2	—	1	—
Cooper and Co.	Worsbro' Park, Rescwon	—	—	1	—	4	—	—
Sellars and Co.	Greasbro'	—	—	1	—	—	—	—
York Road Coal and Iron Co.	Killingbeck, &c.	—	—	1	2	—	1	1
J. Sheard	Gregory Spring	—	—	1	—	—	—	—
W. Horn	West Scrafton	—	—	1	—	—	—	—
Middleton Coal Co.	Middleton	—	—	—	1	—	—	3
Trustees of H. Ellis	Kirkstyles	—	—	—	1	—	—	—
Marriott Brothers	Mirfield Moor	—	—	—	1	—	—	—
W. Ward	Churwell	—	—	—	1	—	—	—
Featherstone Main Co.	Featherstone Main	—	—	—	2	3	—	—
Crawshaw and Warburton	Savile, &c.	—	—	—	1	—	1	—
High Stile Coal Co.	High Stile	—	—	—	1	—	—	2
Park Coal Co.	Liversedge	—	—	—	1	—	—	1
Hall and Stones	High Royd	—	—	—	1	—	1	—
Johnson and Co.	West Pit	—	—	—	1	—	—	—
G. Chambers and Son	Grange	—	—	—	2	1	—	1
T. A. Mann and Co.	Rockley	—	—	—	1	—	—	—
Nunnery Coal Co.	Nunnery	—	—	—	2	5	7	3
Bedford and Co.	Dean Hall	—	—	—	—	1	—	1
Micklefield Coal Co.	Micklefield	—	—	—	—	1	—	—
Swan Bank Coal Co.	Swan Bank	—	—	—	—	1	—	—
E. J. W. Waterhouse	Chevet	—	—	—	—	1	—	—
Messrs. Harrison	Birkhill	—	—	—	—	1	—	—
Stanley Coal Co.	Liversedge	—	—	—	—	1	1	—
Ellison and Broadbent	Whitwell Main	—	—	—	—	1	—	—
T. H. Thorp	Glass Houghton	—	—	—	—	1	—	—
J. Denton and Co.	Grimesthorpe, Brightside	—	2	1	—	1	5	—
Grosvenor and Son	New Hall	—	—	—	—	1	—	—
Waterloo and Woodlesford Co.	Woodlesford	—	—	—	—	—	1	—
J. H. Garbutt	Newton Main	—	—	—	—	—	2	—
T. H. Robinson	Leeds	—	—	—	—	—	1	—
Darley Main Co.	Pindar Oaks	—	—	—	—	—	1	—
J. Helliwell	Deepcar	—	—	—	—	—	1	—
Newhill Coal Co.	Newhill	—	—	—	—	—	1	—
W. Parkin and Sons	Robertown	—	—	—	—	—	1	—
W. Bracewell	Ingleton	—	—	—	—	—	1	1
Silkstone & Dodworth Coal & Iron Co.	Dodworth	—	—	—	—	—	3	—
B. Lockwood	Shuttle Eye	—	—	—	—	—	1	—
W. Lambert	Threshfield	—	—	—	—	—	2	—
J. Critchley	Batley	—	—	—	—	—	1	—
W. H. Stone	Aston Main	—	—	—	—	—	1	—

have taken place—*continued.*

Deaths.																				
1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	Total.
5	—	—	1	1	1	—	1	1	1	—	—	2	—	3	—	1	1	—	1	26
4	—	—	—	—	—	1	3	1	—	1	—	3	1	3	3	2	—	—	1	34
3	3	—	1	1	—	—	2	—	3	1	2	2	—	2	2	5	2	—	2	38
1	—	3	4	—	3	—	3	22	1	3	6	3	—	2	2	—	—	1	—	68
—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	1	1	1	2	2	4	1	3	2	1	4	3	2	—	2	—	2	2	3	53
—	1	1	1	8	—	—	—	1	1	2	2	1	—	1	1	1	1	2	1	37
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
2	4	3	1	4	4	1	1	2	6	—	1	2	—	6	2	5	4	2	3	59
1	—	2	1	—	—	2	—	—	—	—	1	—	1	—	—	—	1	—	—	11
2	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	—	—	6
1	2	1	—	1	—	—	3	1	—	1	1	1	1	1	4	1	2	1	2	27
—	—	—	1	—	—	1	—	1	1	—	—	—	1	—	—	—	—	—	—	6
—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	1	—	—	—	2	—	—	—	—	—	—	—	2	2	1	1	—	—	11
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	2	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	3
—	—	2	—	1	1	1	1	1	1	—	—	2	2	—	1	1	1	—	2	19
—	—	2	—	—	—	—	2	1	2	—	—	1	1	—	—	—	—	139	—	152
—	2	—	—	2	1	1	1	—	—	—	—	1	—	—	—	1	—	—	—	14
—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	2	—	5
1	—	1	—	1	2	—	—	—	—	1	—	—	—	—	—	—	—	—	—	11
1	—	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	5	2	—	—	2	—	—	1	—	—	—	—	—	—	1	15
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
2	—	1	2	—	—	1	—	1	—	—	1	2	2	1	—	1	1	1	2	23
—	—	—	—	—	1	—	—	1	1	—	1	1	1	—	—	—	1	—	—	9
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
1	—	—	2	5	—	1	—	1	—	—	—	—	—	—	—	1	—	—	—	13
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	7
—	—	—	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	4
1	1	4	1	2	1	2	3	1	5	—	6	1	2	3	6	3	5	4	1	69
—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	4
—	—	1	1	—	2	—	—	1	—	—	1	—	—	—	—	—	—	—	1	8
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	1	—	—	—	—	—	—	1	—	1	—	1	—	—	—	—	6
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
2	—	—	1	*1	2	—	3	1	1	—	—	1	1	2	1	4	1	3	4	29
2	—	—	—	2	1	—	—	1	—	—	—	—	—	1	—	—	—	—	—	16
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
—	1	—	2	—	4	—	—	4	1	1	3	1	2	1	2	2	—	—	—	27
—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	1	4
—	—	1	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	4

List of Collieries where Fatal Accidents

Owner's Name.	Name of Colliery.	Deaths.						
		1868.	1869.	1870.	1871.	1872.	1873.	1874.
Fryston Coal Co.	Fryston	—	—	—	—	—	—	1
John Tordoff	Wibsey Bank Foot	—	—	—	—	—	—	1
Bastow and Crossley	White Lee	—	—	—	—	—	—	1
W. Parkin and Sons	Fall Lane	—	—	—	—	—	—	1
Rhodes, Wright, and Wroe	Park Farm	—	—	—	—	—	—	1
C. Marsden and Sons	Smithies	—	—	—	—	—	—	1
Wharncliffe Woodmoor Coal Co.	Wharncliffe Woodmoor	—	—	—	—	—	—	1
John Crowley and Co.	Wincobank	—	—	—	—	—	—	2
E. Lockwood	Woodwell	—	—	—	—	—	—	1
Airedale Brick and Tube Co.	Shipley	—	—	—	—	—	—	1
E. Brooke & Sons	Stile Common	—	—	—	—	—	—	—
Grayson, Lowood, & Co.	Lowood's Wharncliffe	—	—	—	—	—	—	—
T. C. Taylor & Co.	Gomersal Main	—	—	—	—	—	—	—
J. Haigh & Sons	Snowgate Head	—	—	—	—	—	—	—
J. & W. Woodhead	Manor	—	—	—	—	—	—	—
Crossland Coal Co.	Scholes	—	—	—	—	—	—	—
Mirfield Coal Co.	Mirfield Dark Lane	—	—	—	—	—	—	—
Industrial Coal & Iron Co.	Woodhouse Junction	—	—	—	—	—	—	—
Leathly, Bailey, and Dixon	Andrew Hill	—	—	—	—	—	—	—
Doles and Lumb Wood Co.	Doleswood	—	—	—	—	—	—	—
Guy Senior	Oakwell	—	—	—	—	—	—	—
Lofthouse Coal Co.	Lofthouse	—	—	—	—	—	—	—
Mid-Lincoln Iron Co.	Monks Abbey and Greetwell	—	—	—	—	—	—	—
Corton Wood Coal Co.	Corton Wood	—	—	—	—	—	—	—
D. Micklethwaite and Co.	Wrenthorpe	—	—	—	—	—	—	—
Monckton Main Coal Co.	Monckton Main	—	—	—	—	—	—	—
P. Diggett and Co.	Grange Lane	—	—	—	—	—	—	—
T. Johnson	Newmarket	—	—	—	—	—	—	—
Bell Armitage	Dodworth Road	—	—	—	—	—	—	—
Jos. Blakeley	Soothill Wood	—	—	—	—	—	—	—
Yorks. & Derbyshire Coal & Iron Co.	Carlton Main	—	—	—	—	—	—	—
J. Simpkin	Joan Royd	—	—	—	—	—	—	—
Messrs. Jaggar	Emley Moor	—	—	—	—	—	—	—
C. and H. Tinker	Wood	—	—	—	—	—	—	—
Walker and Reddick	Sykes	—	—	—	—	—	—	—
Terry, Greaves, and Co.	Roundwood	—	—	—	—	—	—	—
Dymond and Co.	Liversedge	—	—	—	—	—	—	—
South Kirkby Coal Co.	South Kirkby	—	—	—	—	—	—	—
R. Holliday and Sons	East Ardsley	—	—	—	—	—	—	—
Holmes and Stocks	Quarry House	—	—	—	—	—	—	—
Ibbotson and Haigh	Dungworth	—	—	—	—	—	—	—
G. Fountain and Son	Haigh	—	—	—	—	—	—	—
Fitzwilliam Hemsworth Co.	Fitzwilliam Hemsworth	—	—	—	—	—	—	—
J. Hinchcliffe	Bullhouse	—	—	—	—	—	—	—
Miss E. L. Kaye	Denby Grange	—	—	—	—	—	—	—
H. Lodge	Ryhill Main	—	—	—	—	—	—	—
Wilcock and Co.	Rock	—	—	—	—	—	—	—
Newmarket Coal Co.	Newmarket	—	—	—	—	—	—	—
S. Brown	Flockton	—	—	—	—	—	—	—
Hodroyd Coal Co.	Hodroyd	—	—	—	—	—	—	—
Holdsworth and Wilkinson	Beckitt Street	—	—	—	—	—	—	—
Wath Main Co.	Wath Main	—	—	—	—	—	—	—
J. Gooddy	Darfield Clay Mine	—	—	—	—	—	—	—
Barrow Hæmatite Steel Co.	Barrow	—	—	—	—	—	—	—
T. S. Walsh	Dam Head	—	—	—	—	—	—	—
Houghton Main Co.	Houghton Main	—	—	—	—	—	—	—
Luty and Armitage	New Hall	—	—	—	—	—	—	—
Lord Masham	Ackton Hall	—	—	—	—	—	—	—
John Lister	Sunny Bank	—	—	—	—	—	—	—
Joe Kitson	Denby Dale	—	—	—	—	—	—	—
Clayton and Speight	Ravels	—	—	—	—	—	—	—
Flockton Coal Co.	Hartley Bank	—	—	—	—	—	—	—
T. Woollen	Woodhouse Lane	—	—	—	—	—	—	—
Lidgett Coal Co.	Lidgett	—	—	—	—	—	—	—
J. Lewis	Crossing Lane	—	—	—	—	—	—	—
Jos. Haigh	Sinking Wood	—	—	—	—	—	—	—
Jos. Bedford	Falhouse	—	—	—	—	—	—	—
Mangham and Co.	Scholes	—	—	—	—	—	—	—
Fearnley Garforth	Spring Gardens	—	—	—	—	—	—	—
Waterhouse and Son	Calder Clay Mine	—	—	—	—	—	—	—
W. and J. Cardwell	Whitley Clough	—	—	—	—	—	—	—

have taken place—*continued.*

Deaths.																				
1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	Total.
1	—	—	—	1	1	—	—	3	—	1	—	3	2	5	1	—	—	—	1	20
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	3
—	—	—	1	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	4
—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	3
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	2
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	2
1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	3
4	—	—	1	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	4
2	—	—	1	—	—	—	—	—	3	2	—	1	—	1	1	—	1	—	—	14
1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	2	3	—	1	1	1	1	—	1	1	3	1	2	1	1	1	—	—	2	22
—	1	—	—	—	1	—	—	1	—	1	—	—	—	1	—	—	1	—	1	7
—	1	3	—	—	1	—	4	1	2	2	—	2	—	2	—	3	1	1	2	25
—	1	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	3
—	2	2	—	1	4	—	2	—	—	3	2	5	—	—	2	1	—	1	3	28
—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	1	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	1	—	—	4
—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	1	—	1	—	2	—	—	—	—	—	—	—	2	—	—	1	—	—	7
—	—	1	—	3	1	—	—	1	1	—	2	1	2	1	4	1	2	1	2	23
—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	2
—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	3
—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	1	—	1	—	—	2	—	—	1	—	—	2	—	—	—	—	1	—	8
—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	4	—	—	—	—	2	—	2	2	1	—	1	1	1	1	—	—	—	15
—	—	1	—	—	—	—	—	—	—	2	1	1	2	—	1	—	—	2	—	10
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	2
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	1	—	—	—	—	—	—	1	—	—	1	—	—	—	—	—	—	3
—	—	—	1	5	1	—	—	3	1	—	—	1	—	—	2	—	1	—	2	17
—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
—	—	—	1	—	—	—	—	1	—	2	—	1	—	—	—	1	—	—	—	6
—	—	—	1	—	—	2	—	—	2	1	—	—	—	—	—	2	—	—	—	8
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	1	—	1	—	—	1	—	—	2	—	—	1	1	1	—	1	9
—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	1	—	1	1	3	1	—	1	2	2	1	1	—	2	2	2	20
—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	1	1	—	—	1	2	10	1	4	2	—	—	3	1	2	28
—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	1	1	1	—	1	—	—	—	—	—	—	1	1	2	8
—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	2
—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	1	—	3
—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	1	—	2	5
—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	1	3
—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1

List of Collieries where Fatal Accidents

Owner's Name.	Name of Colliery.	Deaths.						
		1868.	1869.	1870.	1871.	1872.	1873.	1874.
Crigglestone Coal Co. - -	Woollen Well Main and Crigglestone.	—	—	—	—	—	—	—
Low Laiths Coal Co. - - -	Low Laiths - -	—	—	—	—	—	—	—
James Hall - - - -	Thorncliffe Green -	—	—	—	—	—	—	—
D. Rylands - - - -	Rylands Main - -	—	—	—	—	—	—	—
Kippax Lime Co. - - -	Medhurst - -	—	—	—	—	—	—	—
Newton Brooke - - -	Shibden Hall - -	—	—	—	—	—	—	—
W. Woodhead and Son - -	Dixon - - -	—	—	—	—	—	—	—
Briggs and Sons - - -	Queensbury - -	—	—	—	—	—	—	—
T. Thresh and Son - - -	Westgate Common -	—	—	—	—	—	—	—
C. Bramall - - -	Caledonian - -	—	—	—	—	—	—	—
Rushforth and Wheatley - -	Wyre Hall - -	—	—	—	—	—	—	—
	Total - -	80	69	90	84	133	115	112

have taken place—*continued.*

Deaths.																				
1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	Total.
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	1	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	—	—	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
267	71	107	81	114	106	75	95	109	97	85	131	111	88	106	102	99	83	218	100	2,928

The following tables show the comparative percentages between this district and the United Kingdom as regards the various causes of deaths from accidents:—

1894.

YORKSHIRE AND LINCOLNSHIRE.

Explosions of firedamp - - - - - - -	3·
Falls of roof and sides - - - - -	56·
In shafts - - - - - - -	9·
Miscellaneous underground - - - - -	18·
On the surface - - - - - - -	14·
	100·

1894.

GREAT BRITAIN AND IRELAND.

Explosions of firedamp - - - - - -	28·2
Falls of roof and sides - - - - -	39·41
In shafts - - - - - - -	6·85
Miscellaneous underground - - - -	15·75
On the surface - - - - - - -	9·79
	100·

LIST of NON-FATAL ACCIDENTS in the YORKSHIRE and LINCOLNSHIRE DISTRICT from EXPLOSION of FIREDAMP UNDERGROUND in MINES during the Year 1894.

Date.	No. of Accident.	Name of Colliery.	Where situate.	Owner of Colliery.	No. of Persons injured.	Occupation.
Jan. 9	1	Westfield	Wakefield	Westwood & Co.	2	Colliers.
Mar. 6	2	Osmondthorpe	Leeds	Low Moor Iron Co.	1	"
" 9	3	Grimesthorpe	Sheffield	J. Denton & Co.	1	"
April 9	4	Swaithe	Barnsley	Edmunds & Swaithe Main Co.	1	Dayman.
July 12	5	Wood	Huddersfield	Tinker Bros.	1	Collier.
Nov. 7	6	Park Mill	"	Stringer & Co.	2	Collier and hurrier.
Dec. 13	7	Hall Royd	Barnsley	J. Haynes	1	Collier.

The two vacancies on the Board of Examination for Managers' Certificates caused by the deaths of Mr. Huntsman and Mr. Embleton, and which events I alluded to with feelings of deep regret in my last Annual Report, have been now filled up, and the Board is constituted as follows:—

Lord St. Oswald W. Ackroyd, Esq. A. M. Chambers, Esq.	Colliery owners.
T. Carrington, Esq. W. Evans, Esq. Jos. Mitchell, Esq.	Mining engineers or managers.
Mr. Broadhead Mr. Dixon Mr. Walker	Persons not being owners, &c.

Frank N. Wardell, Esq., H.M. Inspector of Mines.

Upon the recommendation of the Board you were pleased to sanction the appointment of Mr. W. Ackroyd as an examiner, and he now therefore acts in that capacity together with Mr. Carrington and Mr. Evans.

The examination in 1894 was held in the Town Hall at Leeds, on the 26th, 27th, 28th, and 29th June.

Of 47 candidates in the first class 17 were successful, and received their certificates; the candidate highest in order of merit in this class obtained 702 marks out of a maximum 900.

In the second class 85 candidates presented themselves, and of these 30 satisfied the examiners and received certificates. The maximum number of marks obtainable in this class was 600, and the candidate highest in order of merit gained 490.

The following table shows the number of candidates who have been examined in this district, together with the number of those who were successful and obtained certificates from the commencement of the Act in 1872 to the present time:—

Date of Examination.	Total Number of Candidates examined.	Number of Candidates passed.	Number of Candidates examined 1st class, 1887 Act.	Number of Candidates passed 1st class, 1887 Act.	Number of Candidates examined 2nd class, 1887 Act.	Number of Candidates passed 2nd class, 1887 Act.
June 17 and 18, 1873 - -	16	9	—	—	—	—
December 17 and 18, „ - -	18	11	—	—	—	—
July 7 and 8, 1874 - -	20	12	—	—	—	—
December 22 and 23, „ - -	16	8	—	—	—	—
June 22 and 23, 1875 - -	20	8	—	—	—	—
„ 27 and 28, 1876 - -	18	12	—	—	—	—
„ 26 and 27, 1877 - -	15	9	—	—	—	—
„ 25 and 26, 1878 - -	15	9	—	—	—	—
„ 24 and 25, 1879 - -	16	8	—	—	—	—
„ 29 and 30, 1880 - -	10	6	—	—	—	—
„ 28 and 29, 1881 - -	11	7	—	—	—	—
„ 13 and 14, 1882 - -	13	5	—	—	—	—
„ 12 and 13, 1883 - -	13	7	—	—	—	—
„ 26 and 27, 1884 - -	12	8	—	—	—	—
„ 29 and 30, 1885 - -	14	10	—	—	—	—
„ 23 and 24, 1886 - -	19	11	—	—	—	—
„ 2 and 3, 1887 - -	17	9	—	—	—	—
„ 5 and 6, 1888 - -	63	36	9	7	54	29
„ 5, 6, and 7, 1889 -	80	60	14	12	66	48
„ 23, 24, and 25, 1890 -	89	71	21	16	68	55
„ 17, 18, and 19, 1891 -	95	55	24	20	71	35
„ 21, 22, 23, and 24, 1892 -	128	67	40	27	88	40
„ 20, 21, 22, and 23, 1893 -	118	70	34	24	84	46
„ 26, 27, 28, and 29, 1894 -	132	47	47	17	85	30
Total -	968	555	189	123	516	283

I have continued to discharge the work appertaining to the office I hold, during the year, and this work becomes more and more onerous and responsible. The whole of the large and varied correspondence has passed through my hands, and the labour involved in this alone is very great and occupies a considerable portion of time.

I have investigated a large number of accidents, both fatal and non-fatal, and have been present at many consultations where, by such advice as my knowledge and experience enabled me to give, I have endeavoured to promote increased safety.

Frequent promiscuous visits have been made to collieries, and in every case without notification.

I have also attended to, and investigated, numerous complaints which have reached me during the year, regardless of the fact of their being anonymous or otherwise.

I have been present at the various meetings of the Board of Examination for managers' certificates and at the examination itself. Also have taken part in many meetings for experiments with both dust, and safety-lamps.

Further, I have attended numerous inquests, and have been able sometimes to suggest the carrying out of alterations which appeared to tend to increased safety, and which were made apparent to me by the evidence.

I have also been engaged at various times at the Home Office, and in prosecutions before magistrates.

I have likewise dealt with such special matters as have been referred to me by the Secretary of State.

My assistants and myself have made 597 underground visits to collieries during the year, for general and special purposes.

Both my assistants continue to perform their duties in a very able and satisfactory manner, and the aid they render in co-operating with me to ensure a due observance of the Acts, is most valuable.

Mr. Mellors travelled over 12,000 miles in the discharge of his duties.

He made 317 visits to collieries, of which 224 were for the purpose of inquiry into fatal and non-fatal accidents. The remainder were promiscuous visits, and with the object of investigating complaints. He also attended a large number of inquests.

Mr. Wilson visited 244 collieries in order to inquire into fatal and non-fatal accidents. He likewise promiscuously inspected 156 collieries, and investigated numerous cases of complaint.

In the performance of these duties he travelled close upon 13,000 miles.

Only one accident attended with fatal consequences occurred in this district during 1894 from explosion of gas, and that took place at the Albert pit of Messrs. Bower's Allerton Main Collieries, on the 19th May. Three lives were lost by this explosion, one man dying on the 24th, another on the 28th, and the third on the 29th of the same month.

There was a 12 foot rise fault and several yards of broken and faulty ground at the end of the east bord in the Silkstone seam. A little gas had been for some time making here, as the roof of the ending had fallen in, owing to the pit having been "idle," and the place in consequence was difficult to ventilate. For the purpose of remedying this state of things, five men were engaged on the 19th May in removing the fall, forcing in ventilation, and clearing away the gas. These men consisted of Saville the under manager, Harrison a deputy, and three miners.

A fan was erected at the end of about 21 yards of wooden pipes 12 inches square, in order to force the air through these pipes up to the fault. The fan was worked by a man by means of a wheel, and would make about 12 revolutions per minute.

One of the joints of the pipes was defective, and Saville and Harrison were taking off the brattice cloth with which it was covered, in order to put in a new pipe and make a better joint, when an explosion occurred, all the five men being more or less burned. The flame seemed to pass down the pipes.

All the men had safety-lamps; every lamp but one was a "Clanny," with a metal bonnet, an ordinary single capped gauze, and the air ascending through holes in the middle ring. The other lamp had a tin shield, and the air was admitted immediately on to the gauze through $\frac{1}{8}$ inch holes round the bottom of the shield. This was the lamp used by Saville and Harrison, and appeared to be the most likely to have fired, indeed, there does not seem to be any reasonable explanation of the explosion other than the fact that the brattice cloth over the joint being removed, a strong current of air would rush out. The lamp at that time was close to the joint and must have been charged with gas, which has then been forced through the gauze and the holes in the shield.

It was possible for Saville and Harrison, in the process of joining the pipes to have struck some iron substance and produced a spark which might have caused the explosion, but I do not think this is so probable a cause as the other.

The quantity of gas cannot have been considerable, for neither sheets nor stoppings were blown down or disturbed in any way, neither were there any signs of burning or charring.

The safety-lamps were not in any way damaged, and were all found locked.

It was most fortunate that there was no coal dust in or near the place, and that the roads were fairly damp, otherwise the result, lamentable as it was, might have been intensely aggravated.

On the 30th April an unfortunate accident occurred at Glass Houghton Colliery, whereby two lives were lost. A shaft was being sunk to the Silkstone seam, and had reached a depth of about 225 yards.

The sides of the shaft were secured by metal walling cribs and brick walling or lining, to the depth of 212 yards, the last length of walling being about 30 yards, and this rested upon a metal crib in a 14-inch bed. The shaft sides from this point to the bottom were secured by skeleton cribs and backing deals, the whole being examined by the chargeman before and during each shift.

On the above-mentioned date the afternoon shift, which commenced at 2 p.m., consisted of 11 men, including the chargeman, and all went well until about 3 o'clock when one side of the shaft suddenly collapsed, and the sinkers were buried under the lining timber, and the debris which fell. Five of the men were able to scramble into the trunk and were drawn out immediately. The manager, the contractor, and others then descended, and made every effort to rescue the remaining six persons. All praise is due to them, for they literally worked in imminent danger, with their lives in their hands, and in about six hours were successful in rescuing four of the men. Two of these were injured rather severely, the other two slightly. Everyone was perfectly satisfied then that the other two men were dead, and it was decided not to risk further loss of life, but to make the shaft safe in order to recover the bodies.

By continuous work and great exertion this was effected on the 7th June, after which an inquest was held, and all the circumstances of the disaster most carefully investigated. At

the time of the accident the shaft was making a little water, and this appeared principally to come from two converging "slips" immediately below the bottom walling crib, and about 10 feet apart. These slips were afterwards found to extend for four or five yards in a vertical downward direction, and I am of opinion they were the primary cause of the accident. The master sinker has had charge of sinking shafts in various districts for a great number of years, and was a thoroughly qualified and competent man. The sinkers themselves were all practical, and men of experience, and I believe every care had been taken in the way of examinations and attention to the rules.

The foregoing are the only two accidents during the year which involved the loss of more than one life.

I will briefly describe such details in a few of the remainder which I consider may be interesting and useful.

How simply and easily a fatality may occur following an apparently trivial circumstance, is shown in the case of a corporal named Parton, who worked at Denaby Main Colliery.

On the 4th January one of the tubs in a train which was being drawn by a horse got off the road, and Parton, in lifting it on again, strained himself in some way. He did not report that he had met with any accident, and did not even mention the matter at home. On the next day, however, he felt ill, and the doctor was called in, but, notwithstanding, he gradually became worse and died on the 6th.

A sinker named Sadler was killed in the Ackton Hall Colliery, on the 18th January, by falling off the walling scaffolding in No. 2 Silkstone shaft.

Eleven men were at work on a scaffold in the shaft, suspended by chains, Smith, the chargeman, being also present. About 2.30 o'clock it became necessary to raise the scaffold, and Smith gave the authorised signal, four raps, for this purpose. The scaffold was accordingly raised, and stopped when in position again by the proper signal. When the chains took the weight of the scaffold, it was found they were not quite level, and here arose a discrepancy between the statement of the chargeman and that of the engineman, for the former declared he again gave four raps in order to have the scaffold raised, and the latter stating that five raps were given, indicating that the empty rope was to be taken up. In consequence the scaffold was raised more suddenly than it otherwise would have been, and as it was not quite level, Sadler was jerked, or fell off, to the bottom of the shaft, a distance of about 23 yards.

There did not appear to be anything wrong or deficient about the shaft or the machinery.

At Waterloo Main Colliery an inclineman named Mason received such injuries on the 2nd February as to cause his death on the following day. He was lowering a train of 14 full tubs to the stop blocks at the head of the incline, and told a man who was present to put lockers in the tubs at the same time, but as he had not first attached the rope, the train ran over the blocks, and one of the tubs ran over Mason. He was in front of the tubs where he ought not to have been, and had been previously cautioned about this. He was in full charge of the incline. There was no fault whatever to be found with the arrangements, and if Mason had not been in front of the tubs the accident would not have happened.

An accident occurred in Houghton Main Colliery on the 5th March to a corporal named Wright, which terminated fatally next day, and which is difficult to explain. He went into the working place of a man named Barrett, who was building a gate side pack, and saying he would get him some stone for the pack, went into the goaf, and with a pick began to knock out a prop. Immediately a very large fall took place, burying him, and from under which he was extricated in about three hours. He was a waggon-way corporal, and his duties were to look after the boys and see to the timber being taken into the working places. He had no right whatever either to set or draw props.

A boy named Childe was killed at Monckton Main Colliery on the 13th March under the following circumstances. His work consisted in regulating a supply of small coal on the "creepers" on the surface, by means of a small lever. By some means he got into the pulley hole, and was crushed between the wall and a pulley. The pulley is under the platform on which Childe stood, which platform is on a level with the railway, and forms a covering for one of the creepers, and is about 9 feet long by 5 feet wide. It is difficult to understand how the boy managed to get into the hole unless he had been lifting and moving the boards which carried it, and overbalanced himself. He knew his work thoroughly, which was very light. He was under the supervision of his uncle, who had charge of the engine which drove the "creepers," but the boy himself had nothing to do with the machinery.

Adam Wild, a shaft man at Bothwell Haigh Collieries, descended the Victoria pumping pit on 22nd August in order to change the bucket of the 4th lift. In order to do this, the pump rods have to be drawn; accordingly when he got down to the platform he uncoupled the rods and signalled for the crab rope. He then attached the rope to the rods

and signalled to raise up steadily. When the rods had been raised about 4 feet the signal hammer sprang up and almost immediately dropped again; the engineman understood this to mean that he was to stop, and he did so. Receiving no further signal the banksman called to ask what was the matter, but got no reply. The pump man therefore went down, and found that Wild had fallen from the platform to the bottom of the shaft, about 75 yards, and was dead. There was nothing disturbed at the platform, and nothing lying about. It seemed probable he had been seized with a fit of giddiness, and fallen. He was a man with more than 20 years' experience of the work.

On the 30th August a boy named Nattrass was killed at Houghton Main Colliery by an act of foolhardiness. He was employed to push empty tubs into the hoist cage on the surface, which is used for raising and lowering stock coal between the ground and the pit hill. After he gave a signal to the engineman and the cage had begun to descend, he attempted to jump into it, but was caught between the flat-sheets and the top of the cage, and so crushed as to cause his death about an hour afterwards. It appeared he had tried to get into the cage in the same way only a few minutes before, and had been cautioned about it.

On the 21st August a byeworkman named Metcalf was suffocated in the Crigglestone Colliery under the following circumstances. The colliery was not at work on that day, but a few men were in, doing repairs and other necessary work. Metcalf was engaged in building a pack at a gate end in the dip district, and he went to this work about 6 a.m. About 2 o'clock p.m. he was found lying on his face, quite dead, by a man named Farrar. There was nothing in the shape of fallen roof or coal upon him, and his lamp was burning. Ephraim Ramsden, the under-manager, was in the pit that day, and he ought to have visited each of the men who were repairing, during the morning, Metcalf amongst them. This he had failed to do. Farrar, who had brought Ramsden and others to help, remarked that he had felt very poorly in this place the day before, and then began to laugh and throw his arms about. The other men at the same time felt strangely ill, and went out, leaving Farrar. When they returned with additional help they found Farrar insensible, and with difficulty brought him round.

The dip district in question was ventilated by a separate current of air, having its own independent upcast shaft, ventilation being obtained by means of exhaust steam from a ram pump and two hauling engines.

On the day in question these engines were not at work, and the pump was off from 7.30 until 2 o'clock for repair. This was known to the under-manager, who also of course knew that he had some men working in the dip district.

Not far from where Metcalf was working, a small pumping engine exhausted into a return air way. This was a paraffin oil engine. The air-way joined another return from the dip district and close to Metcalf, and it is very probable that, in consequence of the ventilation being practically at a standstill, owing to the stoppage of the engines I have alluded to, the fumes from the paraffin engine may have backed down on to the man and suffocated him.

It was suggested that there had been an outburst caused by weighting of "stone" or "laughing" gas, which had been the cause of the poor man's death, but I incline to the former theory, and the jury, after a most painstaking inquiry, returned a verdict of "accidentally suffocated, probably from the fumes of paraffin."

For so gross a breach of the Act and neglect of duty, you were pleased to direct proceedings to be taken against Ramsden, the under-manager, who was accordingly brought before the magistrates at Wakefield, convicted and fined.

H. Hollings, a son of the manager of Wath Main Colliery, was killed there on the 28th September, a very melancholy feature of the sad occurrence being the presence of his father at the time. The young man was employed as a deputy, and was on the endless rope road about 1 p.m. with other men clearing a fall which had taken place. A set of six full tubs on the rope ran into the fall, causing the clip to slip, and the engineman, thinking something was wrong, stopped the engine. When the fall was removed, a signal was given for the rope to start again. The next set of five tubs had then come up to the six already at the fall, so that there were 11 together when the rope commenced to move again. Hollings' father had then arrived. The gradient of the road at this point is one in nine, and when the tubs had proceeded about 60 yards, the clip attached to the last five broke, and these tubs ran back. The manager got into a refuge hole and dragged two of the other men in, the rest, with the exception of Hollings got out of the way, but he, poor fellow, was run over, and died in a few minutes. I think it probable that the clip was injured by the concussion when the tubs stopped at the fall, and the strain when they were taken on again up the incline, caused the breakage.

A man named Elvin lost his life in a sinking shaft at Ackton Hall Colliery. The accident which caused his death was exceedingly simple, and yet of so exceptional a character that I have never in my experience met with or heard of one similar. Elvin was a sinker, and was sitting at the bottom of the shaft with a drill between his knees which two other men were striking. Suddenly a small piece of steel, about the size of a threepenny piece, flew off the head of the drill, and entering his body in the region of the heart killed him almost instantaneously.

One fatal accident occurred in Lincolnshire during the year, and this was at the Grectwell Mines, on the 28th March.

Walter Hasham was assisting W. Gibbins to undercut a large block of ironstone. They did not expect to get the stone down that day, but they had not been at work more than 15 minutes when it suddenly fell, without giving any warning, and striking Hasham, broke his leg. He was taken to the infirmary, but died the same evening. The fall appeared to have been caused by a "slip" which was at the back, and which could not possibly have been seen before the accident. Had the men deemed it necessary to set any timber there was plenty close by them ready for use. The foreman was with the men about half an hour previously, but did not observe any defects, neither did he apprehend any danger. The block which fell would be about 6 or 7 tons in weight.

Certain fatalities came to my knowledge during the year, which, owing to the circumstances under which they occurred, are not brought within the meaning of the Mines Regulation Act, but of which, nevertheless, I append a list, as it has been my practice each year to do.

A man named Evans died in January from alleged injury in Rylands Main Colliery more than three years previously. No inquest was held, and no such accident had been reported to me.

On the 23rd January T. Kennedy, employed at the coke ovens at the Nunnery Colliery, Sheffield, died suddenly at his place of work from natural causes.

A similar event took place in the Methley Junction Colliery, Normanton, on the 20th February, where a deputy called J. Evans died suddenly when at work. He had been ailing for some time.

F. Hay, a boy 17 years old, employed by the Rose Hill Colliery Company, while at work with a carter in a station siding belonging to the Manchester, Sheffield, and Lincolnshire Railway Company, by some means was crushed by a waggon, and died on the same day.

On the 21st May Jas. Speight, a carter employed at the Wath Main Colliery died suddenly from natural causes whilst at his work.

At Sharlston Colliery, Normanton, a guard named Wakefield, employed by the Great Northern Railway Company, was crushed by waggons on the 25th June, and died two days afterwards.

A time-keeper named Copley employed underground at Car House Colliery, Rotherham, was seized with a stroke shortly after coming to his work on July 23rd, and died a few days afterwards.

The manager of the Newton Lane Colliery, Wakefield, found a child fast between the rope and a pulley frame in the colliery yard, where the surface haulage is fixed, on the 31st July. The boy, who had climbed over the fence, was at once extricated, but died immediately.

Richard Clapham, a miner employed at Joan Royd Colliery, became suddenly very ill when at his work on the 31st July, and died in about 15 minutes after he came to the surface. Death was the result of natural causes.

A number of boys, including G. Sylvester, 11 years of age, were playing with some waggons standing at the staithe belonging to the Middleton Coal Company, Leeds, on the 3rd August, when by some means Sylvester was crushed between the buffers and instantly killed.

At Car House Colliery a trammer named Beatson died from natural canses whilst at his work in the pit on the 15th September.

On the 24th October a similar event took place on the surface at Waterloo Main Colliery, Leeds, resulting in the death from natural causes of D. McHugh whilst at work there.

It was alleged that D. Sherry, a miner employed at Whinny Moor Colliery, Wakefield, had his hand slightly crushed when at work on the 21st November, and that his death, which took place on the 26th November, was the result of such injury. A post-mortem was held, and the doctor stated that death was not due to any injury whatever, but owing to failure of the heart's action.

John Taylor, a byeworkman at Rylands Main Colliery, Barnsley, broke a blood vessel when at his work in the pit on the 18th December, and died in a few minutes.

At Barrow Colliery, Barnsley, a miner named W. Humbleby had a fit whilst at work in the pit on the 19th December, and died the same evening.

The following is a list of the mines in my district which have, up to the present time, received exemption under the 1887 Act from the weighing clause under section 12 (3) from the Secretary of State, with the date of such exemption :—

Name of Colliery.	Name of Owners.	Where situate.	Date of Exemption.
Blocking Coal, Dayhole	Park Coal Company	Dewsbury	May 29, 1888.
Nun Brook	,, ,,	,,	,, 29, ,,
Beevers, Gawber	C. Beevers	Barnsley	,, 28, ,,
Clough, Deepcar	J. Gregory	Sheffield	,, 28, ,,
Black Bed, Wortley	J. Cliffe & Son	Leeds	,, 28, ,,
Brickfield, ,,	,, ,,	,,	,, 28, ,,
Thorncliffe Green	Lodge & Hall	Huddersfield	March 5, ,,
Colne Bridge	Charles Wheatley	Mirfield	May 16, ,,
Heaton Hall	,, ,,	,,	,, 16, ,,
Deepcar	J. Armitage	Sheffield	June 14, ,,
Box Moss	Seth Senior & Sons	Huddersfield	,, 14, ,,
No. 3 Drift, Emley	Jaggar & Co.	Wakefield	,, 16, ,,
Speedwell, ,,	,, ,,	,,	,, 16, ,,
Lodge Farm	Holt, Thomas, & Heeley	Bradford	,, 18, ,,
Fall Lane and Woodside	Bill Hanson	Dewsbury	,, 7, ,,
Booth Holme	J. & D. Mosley	Bradford	,, 6, ,,
Falhouse	T. & F. Bedford	Dewsbury	,, 7, ,,
Shipley Clay Mine	J. R. Fyfe & Co.	Bradford	,, 22, ,,
Moor Side, Shelley	F. Shaw & Co.	Huddersfield	,, 22, ,,
Holly Park, Calverley	Holly Park Mill Co.	Bradford	,, 20, ,,
Cockermouth	Jesse Jaggar	Wakefield	July 2, ,,
Red Hill, Tong	Terry & Rushforth	Bradford	,, 2, ,,
Shipley Coal Mine	J. R. Fyfe & Co.	,,	,, 11, ,,
Howroyd, Priestfield	John Cutt	Dewsbury	Sept. 8, ,,
Hopton Mill, Mirfield	Wheatley & Sons	Mirfield	,, 8, ,,
Calder, Elland	E. J. W. Waterhouse	Halifax	,, 27, ,,
Westfield, Ossett	Westwood Coal Co.	Wakefield	Nov. 20, ,,
Woodhouse Lane, East Ardsley	Woodhouse Lane Colliery Co.	,,	,, 22, ,,
Toppit	J. W. Taylor	Huddersfield	Jan. 3, 1889.
Wharncliffe, Pot Clay	Grayson, Lowood, & Co.	Sheffield	Dec. 18, ,,
Northorpe	Mirfield Coal Co.	Mirfield	,, 19, ,,
Threshfield	W. & J. Dolphin	Skipton	April 5, 1890.
Hopton Mill	H. Wheatley & Sons	Mirfield	June 10, ,,
Arborthorne	Duke of Norfolk	Sheffield	Oct. 23, ,,
Cliff Bridge	Cliff Bridge Colliery Co.	,,	April 26, 1892.
Coney Wood	Bowling Iron Co.	Bradford	Aug. 27, ,,
Beacon	Oates & Green	Halifax	,, 31, ,,
Mytholm	,, ,,	,,	,, 31, ,,
Field	,, ,,	,,	,, 31, ,,
Birks	John Morton & Co.	Bradford	Sep. 23, ,,
Fogshaw	J. Cradock	Pateley Bridge	June 9, 1893.
Lumb Lane	Thornton Bros.	Bradford	Sep. 27, ,,
Grange Lane	Burgin & Evers	Rotherham	Feb. 16, 1894.

The following return shows the number of mines at work under the Coal and Metalliferous Mines Regulation Acts in Yorkshire and Lincolnshire during the year 1894, the number of persons employed in and about the mines, the tonnage of mineral raised therefrom, also the tonnage of certain minerals got from operations not coming within the scope of these Acts :—

Under the Coal Mines Act.						Under the Metalliferous Acts.					Totals under both Acts.			
	Persons Employed.						Persons Employed.							
Number of Mines at Work.	Underground. (A.)	Above-ground, including those on Sidings at the Pit. (B.)	On Private Branch Railways and Washing and Coking Coal (C.).	Total (A., B. and C.).	Tons of Mineral wrought.	Number of Mines at Work.	Underground.	Above-ground.	Total.	Tons of Mineral wrought.	Number of Mines at Work.	Persons employed in and about the Mines, including (A., B. and C.).	Tons of Mineral wrought.	Tons of certain Minerals obtained from Open-works.
421	73,519	15,463	2,172	91,154	23,969,765	58	304	596	900	60,105	479	92,054	24,029,870	1,452,859

TOTAL NUMBER of COLLIERIES in YORKSHIRE and LINCOLNSHIRE,

421.

—	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Total number of days worked by the 421 collieries.	10,022	8,451	8,381	8,328	8,303	8,347	8,124	7,968	7,792	9,214	8,577	7,644	101,151
Average number of days worked per colliery.	$23\frac{3}{4}$	20	$19\frac{3}{4}$	$19\frac{3}{4}$	$19\frac{3}{4}$	$19\frac{3}{4}$	$19\frac{1}{2}$	19	$18\frac{1}{2}$	$21\frac{3}{4}$	$20\frac{1}{2}$	18	—
Total number of days worked per colliery.	—	—	—	—	—	—	—	—	—	—	—	—	240

With regard to the danger from firedamp in the working of mines the most prominent points which are still uppermost in our thoughts, when endeavouring to minimise it, are, the use of a safety-lamp, which has been ascertained by experiment and practical test to be the safest known lamp, the use of safety explosives in lieu of gunpowder, the consideration and treatment of coal dust, so conclusively proved to be a grave source of danger, more especially when in conjunction with gas, and, together with all these, adequate ventilation, properly distributed, and the maintenance of the strictest discipline.

There is no doubt that the precautions to be taken in dealing with coal dust will form a weighty matter for consideration in any amendment of the Coal Mines Act.

Although some of the most fiery mines in the country are worked in this district, yet there have only been three deaths from explosion of gas during the year, but the self-satisfaction consequent upon this must not be allowed to diminish carefulness and vigilance, for with largely extending mining operations, and for the most part at great depths, so also does the danger from firedamp increase.

In the matter of the use of the high explosives, which are also called flameless, I do not think there are any which may be regarded as absolutely safe, but there can be no question that, compared with gunpowder, they are steps in the right direction, and their substitution for it, is calculated to decrease considerably the risks attendant upon shot-firing.

Many of the accidents which arise from falls are very difficult to be prevented, even by the strictest surveillance. The management must see that timber is available on the spot where and when it is required, but the workman himself should look after the roof and sides in his own working place over which he has the entire control, subject, of course, to the regulations of the colliery, and being constantly engaged there, must know best what is required as his work proceeds.

This personal care by the workman, and the responsibility of the owner and manager, should not on any account be weakened.

Some accidents arise from want of ordinary care. In spite of warnings a workman will sometimes expose himself to danger rather that be at the trouble to use material which is close at hand, in order to make himself secure.

In other cases falls occur by reason of "slips" or "partings" which cannot by any possibility be detected beforehand.

It is always better, as I have said before, to set more props than appear to be required than one too few.

The regular setting of timber at stated intervals, if enforced by law, would only be extending what is already enacted by special rule in this district with regard to sprags.

I also repeat, what I have always advocated, that a regular system of inspection of working places should be carried out during the time men are at work as well as before they commence.

In many collieries the way of exit by the returns is now indicated, by different methods, in order that a workman may, in case of emergency, be enabled to use it. I should like this arrangement to be extended to every colliery.

I have taken every means in my power, in this, as in former years, to encourage the establishment of classes under the St. John Ambulance Association. These classes are, I believe, everywhere increasing, and so is the knowledge of the invaluable benefits arising from the instruction and information imparted by means of this Association.

There has not been any fatality at any of the ironstone mines in Yorkshire during the year.

Reports of proceedings taken against persons employed in and about mines have been sent to me, in accordance with the 66th section of the Act, and have been forwarded by me to you during the year. These proceedings were taken at 25 collieries, and involved 78 separate offences.

8,242 persons under the age of 16 were employed in and about mines in this district, equal to a proportion of one-eleventh of the total number.

There were two females employed on the surface, which is the same number as in the last five years.

The following table shows the hour of the shift in which each fatal accident occurred in this district during the year 1894.

Underground.													Aboveground.													Total Number of Fatal Accidents.
1st Hour.	2nd Hour.	3rd Hour.	4th Hour.	5th Hour.	6th Hour.	7th Hour.	8th Hour.	9th Hour.	10th Hour.	11th Hour.	12th Hour.	More than 12 Hours.	1st Hour.	2nd Hour.	3rd Hour.	4th Hour.	5th Hour.	6th Hour.	7th Hour.	8th Hour.	9th Hour.	10th Hour.	11th Hour.	12th Hour.	More than 12 Hours.	
10	13	12	7	10	5	15	7	1	—	—	1	1	1	—	—	1	2	2	2	2	2	1	—	—	1	97 {including one accident, hour not known. Man continued to work, and never reported accident.

The total number of mines in this district in 1894 was 421, which is a decrease of three compared with the year preceding, when the number was 424.

I have received 520 notices of accident during the year, both fatal and non-fatal.

Fatalities occurred at 55 out of the total number of collieries (421), which is equivalent to a proportion of about 13 per cent.

I have, &c.
FRANK N. WARDELL.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State.

COAL MINES REGULATION ACT.

LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom within ONE YEAR and a DAY from the DATE of the ACCIDENT, in MR. WARDELL'S DISTRICT, consisting of YORKSHIRE AND LINCOLNSHIRE, during the Year 1894.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
1	1894. Jan. 3 11 a.m.	5th	North Gawber	Barnsley	Fountains and Burnley	W. Lake	51	Collier	Fall of roof; died 6th	–	1	–	–	–	1
2	Jan. 3 4 p.m.	2nd	Middleton	Leeds	M. E. & C. Co.	J. Kilburn	37	Deputy	Fall of roof; died 4th	–	1	–	–	–	1
3	Jan. 5 5 a.m.	8th	Morley Main	Ditto	M. M. Coal Co.	W. Barraclough	17	Driver	Injured by tubs	–	–	–	1	–	1
4	Jan. 4 10 a.m.	4th	Denaby Main	Rotherham	D. M. Coal Co.	J. Parton	21	Corporal	Strained himself; died 6th	–	–	–	1	–	1
5	Jan. 12 10.50 p.m.	1st	Woolley	Barnsley	W. Coal Co.	W. Hardy	51	Bye-workman.	Fall of stone	–	1	–	–	–	1
6	Jan. 18 2.30 p.m.	1st	Ackton Hall	Pontefract	A. H. Coal Co.	J. Sadler	—	Sinker	Fell down shaft	–	–	1	–	–	1
7	Jan. 19 9.15 a.m.	4th	Rotherham Main.	Rotherham	J. Brown & Co.	J. Wilson	16	Stoker	Crushed by waggon	–	–	–	–	1	1
8	Jan. 23 1.30 p.m.	8th	Newmarket	Wakefield	J. & J. Charlesworth	W. Smith	36	Collier	Fall of roof	–	1	–	–	–	1
									Total—January	–	4	1	2	1	8

List of Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
9	1894. Feb. 2 6.10 a.m.	1st	Waterloo Main	Leeds	Brooks & Pickup	S. Mason	21	Incline-man	Crushed by tubs; died 3rd	–	–	–	1	–	1
10	Feb. 2 4.30 p.m.	9th	Bowling	Bradford	B. I. Co.	N. Proctor	45	—	Crushed by waggons; died 12th	–	–	–	–	1	1
11	Feb. 6 8.45 a.m.	3rd	Orgreave	Rotherham	R. V. Coal Co.	J. Hadfield	35	Stallman	Injured by tub; died 7th	–	–	–	1	–	1
12	Feb. 9 12.15p.m.	7th	Nostell	Wakefield	Lord St. Oswald	S. Warburton	34	Collier	Fall of stone; died 10th	–	1	–	–	–	1
13	Feb. 16 2.30 p.m.	7th	Peckfield	Leeds	M. C. & L. Co.	H. Patrick	28	Contractor	Fall of roof	–	1	–	–	–	1
14	Feb. 20 3 p.m.	1st	Cortonwood	Barnsley	C. Coal Co.	J. H. Whitelam	28	Trammer	Injured by tub; died 1st May	–	–	–	1	–	1
15	Feb. 28 10.30a.m.	5th	Darfield Main	Ditto	D. M. Coal Co.	A. Taylor	63	Labourer	Run over by waggon	–	–	–	–	1	1
									Total—February	–	2	–	3	2	7

List of Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
16	1894. Mar. 3 6.50 a.m.	1st	Wyre Hall	Bradford	Rushforth & Wheatley	W. Parker	50	Collier	Fall of coal	–	1	–	–	–	1
17	Mar. 5 6.30 a.m.	1st	Houghton Main	Barnsley	H. M. Coal Co.	R. Wright	33	Corporal	Fall of stone; died 6th	–	1	–	–	–	1
18	Mar. 6 5.15 p.m.	8th	Orgreave	Rotherham	R. V. Coal Co.	E. Hutton	58	Pick-sharpener.	Run over by waggons; died 7th	–	–	–	–	1	1
19	Mar. 8 7 a.m.	1st	Barrow	Barnsley	B. H. Steel Co.	W. Knox	23	Waggon lowerer.	Knocked down by waggons	–	–	–	–	1	1
20	Mar. 13 12.30 p.m.	7th	Monckton Main	Ditto	M. M. Coal Co.	F. Childe	13	—	By machinery	–	–	–	–	1	1
21	Mar. 22 3.30 p.m.	2nd	Ditto	Ditto	Ditto	S. Harris	20	Jinny-boy	Fall of roof	–	1	–	–	–	1
22	Mar. 26 4 p.m.	10th	Waterloo Main	Leeds	Brooks & Pickup	J. Waite	50	Engine-man	Crushed by waggon; died 27th	–	–	–	–	1	1
									Total—March	–	3	–	–	4	7
23	Apr. 17	–	Sharlston	Normanton	N. S. Coal Co.	J. Kelly	—	Collier	Fall of coal; died 3rd May	–	1	–	–	–	1
24	Apr. 23 11.30 a.m.	–	Kiveton Park	Sheffield	K. P. Steel Co.	J. Edwards	60	Stallman	Fall of roof	–	1	–	–	–	1
25	Apr. 30 3.20 p.m.	2nd	Glass Houghton	Castleford	T. H. Thorpe	W. Jones T. Freeman	30 40	Sinker Ditto	Collapse of shaft-lining	–	–	2	–	–	2
									Total—April	–	2	2	–	–	4

List of Fatal Accidents—*continued*.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
	1894.														
26	May 2 10.30a.m.	5th	Thorncliffe -	Sheffield -	Newton Chambers -	F. Womersley -	17	Driver -	Fall of roof - - - - -	–	1	–	–	–	1
27	May 5 11 p.m.	7th	Car House -	Rotherham -	J. Brown & Co. - -	F. Chadburn -	32	Trammer -	Ditto - - - -	–	1	–	–	–	1
28	May 18 8.30 p.m.	7th	Featherstone -	Pontefract -	F. M. Coal Co. - -	J. Taylor -	23	Bye workman.	Fall of stone - - - -	–	1	–	–	–	1
29	May 18 5 a.m.	8th	Fryston -	Castleford -	F. Coal Co. - -	J. Poole -	17	Driver -	Fell from cage - - -	–	–	1	–	–	1
30	May 19 12 p.m.	7th	Allerton Main -	Leeds -	T. & R. W. Bower -	S. Newell -	36	Collier -	Gas; died 24th - -	–	–	–	–	–	–
						R. Saville -	55	Under-manager.	Ditto 28th - - -	–	–	–	–	–	–
						J. Davidson -	35	Bye workman.	Ditto ditto - - -	3	–	–	–	–	3
31	May 23 12.30p.m.	7th	Thrybergh Hall	Rotherham -	J. & J. Charlesworth -	C. Vickers -	31	Collier -	Fall of roof; died 24th - -	–	1	–	–	–	1
32	May 24 12.30p.m.	7th	Lofthouse -	Wakefield -	L. Coal Co. - -	W. E. Nicholson	43	Ditto -	Ditto - - - -	–	1	–	–	–	1
33	May 24 11.50p.m.	8th	Tinsley Park -	Sheffield -	T. Coal Co. - -	J. Booth -	47	Ditto -	Ditto - - - -	–	1	–	–	–	1
34	May 26 2 p.m.	2nd	Barrow -	Barnsley -	B. H. S. Co. - -	G. Uroe -	46	Chargeman	Fall of stone - - - -	–	1	–	–	–	1
35	May 29 4.50 a.m.	7th	Waterloo Main	Leeds - -	Brooks and Pickup -	J. Stocks -	69	Collier -	Fall of roof - - -	–	1	–	–	–	1
36	May 27 2.30 a.m.	5th	Woolley -	Barnsley -	Fountain and Burnley -	W. Thickett -	23	Water-lader	Injured by water-barrel; died 30th	–	–	–	1	–	1
									Total—May -	3	8	1	1	–	13

List of Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
37	1894. June 6 9.30 a.m.	3rd	Tinsley Park -	Sheffield -	T. Coal Co. - -	J. Allsopp -	36	Collier -	Fall of stone - - -	–	1	–	–	–	1
38	June 12 11 a.m.	6th	Park Hill -	Wakefield -	V. C. & C. Co. - -	W. Farrer -	24	Ditto -	Ditto - - - -	–	1	–	–	–	1
39	June 13 8.30 a.m.	3rd	Hoyland Silkstone.	Barnsley -	H. S. Coal Co. - -	R. Rushforth -	50	Ditto -	Ditto - - - -	–	1	–	–	–	1
40	June 22 12 a.m.	6th	Monckton Main	Ditto -	M. M. Coal Co. - -	W. Hewitt -	50	Screenman	Injured by waggons; died 25th -	–	–	–	–	1	1
41	June 29 11.30a.m.	6th	Hoyland Silkstone.	Ditto -	H. S. Coal Co. - -	W. Chambers -	36	Labourer -	Ditto - - - -	–	–	–	–	1	1
42	June 30 10.30a.m.	6th	Carlton Main -	Ditto -	C. M. Coal Co. - -	J. Readman -	14	Screen boy	Ditto - - - -	–	–	–	–	1	1
									Total—June - -	–	3	–	–	3	6

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
	1894.														
43	July 19 6.50 p.m	5th	Lidgett -	Wakefield -	L. Coal Co. - -	W. Ottley -	30	Trammer -	Fall of roof - - - -	–	1	–	–	–	1
44	July 23 7.0 a.m.	2nd	Sharlston -	Normanton -	N. S. Coal Co. - -	R. Roden -	53	Collier -	Fall of coal - - -	–	1	–	–	–	1
45	July 24 9 p.m.	7th	Denaby Main -	Rotherham -	D. M. Coal Co. - -	E. Foster -	23	Filler -	Injured by prop; died 30th -	–	–	–	1	–	1
46	July 26 10 a.m.	4th	Tinsley Park -	Sheffield -	T. Coal Co. - -	O. Burgin -	32	Collier -	Fall of roof - - - -	–	1	–	–	–	1
47	July 26 9 p.m.	8th	Monk Bretton -	Barnsley -	W. Pepper - -	J. H. Armitage	30	Filler -	Fall of coal; died 30th Sept. -	–	1	–	–	–	1
48	July 27 12 p.m.	6th	Fitz. Hemsworth	Wakefield -	New F. H. Coal Co. -	J. Radford -	18	Assistant Hanger-on.	Injured by cage - - - -	–	–	1	–	–	1
49	July 30 9.40 a.m.	16th	Oaks - -	Barnsley -	C. Cammell & Co. -	W. Charlton -	18	Driver -	Fell from cage - - -	–	–	1	–	–	1
50	July 31 10 a.m.	4th	Nostell -	Wakefield -	Lord St. Oswald - -	H. Bickley -	23	Collier -	Fall of stone; died 23rd Aug. -	–	1	–	–	–	1
51	July 31 10.30a.m.	5th	Fitz. Hemsworth	Ditto -	New H. Coal Co. -	J. Miles -	32	Labourer -	Fall of roof - - -	–	1	–	–	–	1
52	July 31 8.30 a.m.	7th	Lidgett -	Ditto -	L. Coal Co. -	C. Hewitt -	45	Deputy -	Injured by tubs; died 8th Aug. -	–	–	–	1	–	1
									Total—July - -	–	6	2	2	–	10

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
	1894.														
53	Aug. 2 12.30p.m.	7th	Manners Main	Rotherham	M. M. Coal Co.	W. Bowen	26	Collier	Fall of coal	–	1	–	–	–	1
54	Aug. 2 7.15 a.m.	2nd	FeatherstoneMain	Pontefract	F. M. Coal Co.	J. Foster	30	Ditto	Fall of roof	–	1	–	–	–	1
55	Aug. 9 8 p.m.	7th	Fence	Rotherham	R. V. Coal Co.	J. Cheetham	17	Driver	Injured by tubs	–	–	–	1	–	1
56	Aug. 11 5.45 p.m.	5th	Allerton Bywater	Castleford	S. & H. M. Coal Co.	J. Gill	40	Dayman	Fall of roof	–	1	–	–	–	1
57	Aug. 13 5 p.m.	3rd	Monk Bretton	Barnsley	W. Pepper	A. Mitchell	38	Collier	Fall of coal; died 20th	–	1	–	–	–	1
58	Aug. 15 7.45 a.m.	2nd	Prince of Wales	Pontefract	J. Rhodes	J. Hofton	54	Ditto	Fall of roof	–	1	–	–	–	1
59	Aug. 15 10 a.m.	4th	Nunnery	Sheffield	N. Coal Co.	G. Pollard	50	Ditto	Fall of roof; died 18th	–	1	–	–	–	1
60	Aug. 16 8.40 p.m.	9th	Strafford	Barnsley	S. Coal Co.	J. Mulhearn	24	Roadman	Fall of roof	–	1	–	–	–	1
61	Aug. 21 1.30 p.m.	8th	Crigglestone	Wakefield	C. Coal Co.	B. Metcalfe	48	Byeworkman	Suffocated	–	–	–	1	–	1
62	Aug. 22 10.0 a.m.	4th	Rothwell Haigh	Leeds	J. & J. Charlesworth	A. Wild	49	Bucket-changer.	Fell down shaft	–	–	1	–	–	1
63	Aug. 27 11.0 a.m.	5th	Aldwarke Main	Rotherham	J. Brown & Co.	A. Walters	30	Collier	Fall of coal	–	1	–	–	–	1
64	Aug. 28 9.0 a.m.	3rd	Nostell	Wakefield	Lord St. Oswald	J. Bentley	36	Ditto	Fall of coal; died 29th	–	1	–	–	–	1
65	Aug. 30 9.0 a.m.	3rd	Wheldale	Castleford	W. Coal Co.	C. Butterfield	31	Ditto	Fall of coal	–	1	–	–	–	1
66	Aug. 30 3 p.m.	9th	Houghton Main	Barnsley	H. M. Coal Co.	J. Nattrass	16	Striker	Crushed by cage	–	–	–	–	1	1
									Total—August	–	10	1	2	1	14

List of Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous Underground.	Lives lost. Above Ground.	Lives lost. Total.
	1894.														
67	Sept. 1 12.30p.m.	7th	Tinsley Park	Sheffield	T. Coal Co.	J. Brown	40	Banksman	Injured by waggons	–	–	–	–	1	1
68	Sept. 4 2.30 p.m.	1st	Roundwood	Rotherham	R. Coal Co.	L. Roebuck	64	Deputy	Injured by tub	–	–	–	1	–	1
69	Sept. 6 6.30 p.m.	12th	Rockingham	Barnsley	Newton Chambers	G. H. Luckman	14	Driver	Fell off tub	–	–	–	1	–	1
70	Sept. 11 9 a.m.	3rd	Wharn. Silks.	Ditto	W. S. Coal Co.	F. Noble	40	Labourer	Fall of side	–	1	–	–	–	1
71	Sept. 20 2.15 p.m.	5th	Caledonian	Sheffield	C. Bramall	F. Barns	66	Clay-miner	Fall of coal; died 21st	–	1	–	–	–	1
72	Sept. 21 4.30 p.m.	3rd	Hoyland Silks.	Barnsley	H. S. Coal Co.	F. Currie	52	Collier	Fall of coal; died 25th	–	1	–	–	–	1
73	Sept. 28 1.20 p.m.	7th	Wath Main	Rotherham	W. M. Coal Co.	H. W. Hollings	21	Deputy	Run over by tubs	–	–	–	1	–	1
									Total—September	–	3	–	3	1	7
74	Oct. 3 1.30 p.m.	8th	Orgreave	Sheffield	Rother Vale Coal Co.	W. Newcombe	14	Screen-boy	Injured by waggon; died 4th	–	–	–	–	1	1
75	Oct. 5 1.0 a.m.	4th	Cortonwood	Barnsley	C. Coal Co.	A. White	42	Dataler	Fall of roof	–	1	–	–	–	1
76	Oct. 9 4.0 p.m.	2nd	Roundwood	Rotherham	R. Coal Co.	G. Youngman	31	Trammer	Run over by tubs	–	–	–	1	–	1
77	Oct. 29 1.0 p.m.	7th	Allerton	Leeds	T. and R. W. Bower	J. Tyrrell	38	Collier	Fall of roof	–	1	–	–	–	1
78	Oct. 31 4.0 a.m.	7th	Hoyland Silks	Barnsley	H. S. Coal Co.	J. Exley	14	Trammer	Fall of roof; died 1st November	–	1	–	–	–	1
									Total—October	–	3	–	1	1	5

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
79	1894. Nov. 1 3.30 p.m.	2nd	Treeton	Rotherham	Rother Vale C. Co.	J. Athway	37	Onsetter	Injured by cage	–	–	1	–	–	1
80	Nov. 2 3 p.m.	2nd	Aldwarke Main	Ditto	J. Brown and Co.	W. Brooks	16	Driver	Injured by tub	–	–	–	1	–	1
81	Nov. 6 1 a.m.	3rd	Scholes	Ditto	S. Co.	J. Dobson	26	Byeworkman	Fall of roof	–	1	–	–	–	1
82	Nov. 7 4 p.m.	2nd	Ackton Hall	Pontefract	A. H. C. Co.	H. Elvin	27	Sinker	Injured while drilling a shot hole	–	–	1	–	–	1
83	Nov. 14 7 a.m.	1st	Batley	Leeds	J. Critchly and Sons	J. Hemingway	48	Collier	Fall of stone; died Dec. 25th	–	1	–	–	–	1
84	Nov. 22 12 p.m.	6th	Monk Bretton	Barnsley	W. Pepper	J. Smith	22	Driver	Crushed by tubs	–	–	–	1	–	1
85	Nov. 22 8 p.m.	14th	Glass Houghton	Castleford	T. H. Thorpe	J. Kerrigan	31	Waggon-setter.	Injured by waggon; died Dec. 29th	–	–	–	–	1	1
86	Nov. 29 1.5 a.m.	4th	Ditto	Ditto	T. H. Thorpe	W. Harwood	22	Labourer	Fall of stone	–	1	–	–	–	1
87	Nov. 30 11 p.m.	2nd	Wheldale	Ditto	W. C. Co.	D. Wood	25	Byeworkman	Fall of roof	–	1	–	–	–	1
									Total—November	–	4	2	2	1	9

List of Fatal Accidents—*continued.*

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above Ground.	Total.
	1894.														
88	Dec. 7 8.30 a.m.	3rd	Bruntcliffe -	Leeds -	J. Haigh - -	F. W. Read -	60	Collier -	Fall of stone - - -	–	1	–	–	–	1
89	Dec. 10 6.20 a.m.	1st	Manvers Main	Rotherham -	M. M. C. Co. - -	H. Wingfield -	39	Ditto -	Crushed by tubs; died 11th -	–	–	–	1	–	1
90	Dec. 12 11.30 a.m.	5th	Denaby Main -	Ditto -	D. M. C. Co. - -	H. Cooper -	52	Ditto -	Fall of coal - - -	–	1	–	–	–	1
91	Dec. 14 7.10 a.m.	2nd	St. John's -	Normanton -	Locke and Co. - -	J. Whiteman -	34	Ditto -	Ditto - - -	–	1	–	–	–	1
92	Dec. 17 11.15 p.m.	3rd	Lofthouse -	Wakefield -	L. C. Co. - -	R. Lee -	16	Byeworkboy	Struck by crab handle - -	–	–	–	1	–	1
93	Dec. 18 8.30 a.m.	3rd	Strafford -	Barnsley -	S. C. Co. - -	W. Marshall -	52	Collier -	Fall of coal - - -	–	1	–	–	–	1
94	Dec. 19. 10.15 a.m.	5th	Carlton Main -	Ditto -	Yorkshire and Derbyshire C. Co.	H. Green -	29	Ditto -	Ditto - - -	–	1	–	–	–	1
95	Dec. 21 11.30 a.m.	6th	Manvers Main	Rotherham -	M. M. C. Co. - -	J. Chandler -	37	Ditto -	Ditto - - -	–	1	–	–	–	1
96	Dec. 22 7.0 a.m.	1st	Fence - -	Ditto -	Rother Vale C. Co. -	G. Smith -	22	Filler -	Fall of stone - - -	–	1	–	–	–	1
									Total—December - -	–	7	–	2	–	9
									Gross Total—Yorkshire -	3	55	9	18	14	99
					LINCOLNSHIRE.										
97	March 28 2.30 p.m.	8th	Greetwell -	Lincoln -	Mid Lincoln Iron Co. -	W. Hesham -	21	Miner -	Fall of stone - - -	–	1	–	–	–	1
									Total—March - -	–	1	–	–	–	1
									Gross Total—Yorkshire and Lincolnshire - -	3	56	9	18	14	100

(E.)

BOARD for EXAMINATION for the Mining District of YORKSHIRE and LINCOLNSHIRE.

5, PICCADILLY, BRADFORD, YORKSHIRE,
189 .

SIR,

I AM directed by the Chairman of the Board for Examinations for this District to inform you that the Secretary of State has been pleased to order the next examination of candidates for certificates of competency within the district to be held in the town of Leeds, in the County of York, on the day of next, and that such examination will be held accordingly, at on that day, commencing at 10 o'clock in the morning.

It will be necessary for you to present yourself punctually at the appointed hour.

The following gentlemen have been appointed examiners :—

W. ACKROYD, Esq., Mining Engineer.
THOMAS CARRINGTON, Esq., Mining Engineer.
WILLIAM EVANS, Esq., Manager of Mines.

It is impossible to fix beforehand the length of time which the examination may occupy, but it is not probable that your attendance will be required for more than days.

The subjects fixed for examination of candidates for *first-class* certificates are the following :—

1. Arithmetic :—The first four rules ; Vulgar fractions and decimal fractions ; Extraction of square and cube roots.
2. Ventilation :—Common air and gases ; different methods of ventilation.
3. The use of instruments for surveying and dialling and levelling (dialling by both fast and loose needle), and the testing of instruments for surveying. Plotting surveys and making plans and sections.
4. The winning and working of Coal Mines.
5. Practical Mechanics.
6. The Coal Mines Regulation Act, 1887, and the Special Rules in force in this district.

The subjects fixed for examination of candidates for *second-class* certificates are the following :—

1. Reading and writing.
2. Arithmetic :—The first four rules.
3. Ventilation :—Common air and gases ; different methods of ventilation.
4. The use of the anemometer, barometer, thermometer, and water gauge.
5. The Coal Mines Regulation Act, 1887, and the Special Rules in force in this district.

Under the Coal Mines Regulation Act, 1887, no person will be entitled to a certificate (in either class) unless he shall have had practical experience in a mine for at least five years.

A period of apprenticeship to a mining engineer cannot be substituted as an alternative for an equivalent period of regular employment in a mine under the Act unless the apprentice has in the discharge of his duties to go down mines and obtain practical experience therein.

It will be necessary for you to send to me, on or before the day of next—

1. Your authorisation from the Secretary of State to appear for examination. (The fee payable for this authorisation is £ , which should be remitted to the Under Secretary of State, Home Office, Whitehall, by means of a Post Office Order on the General Post Office, London, payable to C. J. Kynvett, Esq.)

2. The prescribed evidence as to character, consisting of—

(*a.*) A statement of your age, and of the situations you have filled during the last five years, to which a declaration must be appended that all the allegations are true, such declaration being signed by you in the presence of one witness.

(*b.*) A testimonial from a clergyman, or other minister of religion, or a magistrate, as to your sobriety and general good conduct, and a testimonial from your employer as to your sobriety, experience, ability, and general good conduct.

No person under the age of 23 years is eligible.

I am, Sir,
Your obedient Servant,
JOHN R. JEFFERY,
Secretary.

Mr.____________________

Mr. Wardell's Report.

REPORT on the WORKING of the METALLIFEROUS MINES REGULATION ACTS in the YORKSHIRE and LINCOLNSHIRE DISTRICT, during the Year 1894. By FRANK N. WARDELL, Esq., F.G.S.

SIR,

Wath, February 1895.

I HAVE the honour to submit to you my Report on the working of the Acts in this district during the year 1894.

There was one fatal accident, resulting in one death.

This occurred at a small lead mine at Appletreewick, near Skipton, on the 11th April. Joseph Birch was the only person at work in the mine, which was the property of himself, his brother, Robert, and another partner, Baines. There were no others besides these three persons employed in or about the mine. There are two shafts about 50 yards in depth. One of these was used as a drawing shaft only, the other for climbing in and out of the mine. The winding rope was wire, of about ½ inch thickness, which passed round the drum and had an iron bucket attached to each end of it, the empty bucket descending at the same time that the full one ascended. The working load was about 6 cwt.

At the time of the accident Baines was banking, Robert Birch was driving the horse, and Joseph Birch was filling and hanging on at the bottom of the shaft.

Just as R. Birch was about to land the full bucket, the rope broke about 2 feet above the handle, and the bucket falling down the shaft struck J. Birch on the head and killed him. It appears it was customary for the man at the bottom to stand in the shaft, in order to pull the descending empty bucket into the level, so as not to have to lift it, and there is no doubt that had Birch remained in the level until the full bucket was landed at the top, the accident would not have occurred. At the inquest the jury returned a verdict of "Death by misadventure."

The amount of mineral raised in this district in 1894 was 60,105 tons. In the previous year the output amounted to 60,021 tons, so that an increase of 84 tons only is exhibited in the year under report.

The number of persons engaged in the production of these minerals was 875 in 1893, and 900 in 1894, showing an increase of 25 persons.

Three boys under the age of 16 were employed below ground, and five under 13 on the surface.

There was one female under the age of 18 employed.

The following table shows the amount of mineral raised, the number of persons employed, and the proportion of tons produced per person employed in each year from and including 1880.

Year.	Mineral raised.	Persons employed.	Proportion of tons produced per person employed.
1880 - -	52,857 $\frac{6}{20}$	1,126	46·9
1881 - -	39,580 $\frac{14}{20}$	807	49
1882 - -	44,397 $\frac{3}{20}$	835	53·1
1883 - -	87,230 $\frac{11}{20}$	1,088	80
1884 - -	63,421	971	65
1885 - -	39,172 $\frac{16}{20}$	715	54·7
1886 - -	62,686 $\frac{5}{20}$	975	64·3
1887 - -	80,808 $\frac{10}{20}$	1,102	73·9
1888 - -	89,091	970	91·8
1889 - -	64,793	830	78·1
1890 - -	53,398	720	74·1
1891 - -	57,649	894	64·5
1892 - -	47,327	755	62·6
1893 - -	60,021	875	68·8
1894 - -	60,105	900	66·8

There is nothing further to which I need call your attention in this report.

I have, &c.,

FRANK N. WARDELL.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State.

Metalliferous Mines Regulation Act, 1872.

Fatal Accidents and Loss of Life arising therefrom, in Mr. Wardell's District, consisting of Yorkshire and Lincolnshire, during the Year 1894.

No. of Accident.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at Work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	No. of Lives lost in Shafts.
1	1894. April 11 11.30 a.m.	5th	Appletreewick -	Grassington -	Birch and Baines -	J. Birch -	63	Lead-miner	Injured by bucket - - - -	1
									Total for the year - -	1

METALLIFEROUS MINES REGULATION ACT.

SUMMARY of Persons employed in and about the Mines, and Quantity of Mining Produce, for the Year 1894.

Owner.	Mine.	Kind of Mineral.	Mineral dressed. Statute Tons.	Undressed Mineral sold, treated, or used (exclusive of that which has been stocked or from which Mineral has been dressed). Statute Tons.
R. Fouldes	Near Croft	Freestone	1,023	—
Walker & Co.	Pearson Brow	"	350	—
Do.	Rough Heys	"	850	—
J. Roper and Sons	Lightcliffe Road	"	1,050	85
Bentley and Smith	Castle Felds	"	—	9,350
S. Cliffe & Son	Middle Stubbins	"	1,508	—
G. Vint and Brothers	Idle	"	1,400	300
J. Sunderland	Lillands	"	1,630	—
S. Parkinson	Hazlehurst	"	1,500	—
T. Collins & Sons	Yew Tree	"	2,000	—
J. & W. Wyld	Ashley Road	"	3,400	600
R. Roper	Legrams	"	800	—
R. Kershaw	Giles House	"	212	120
Do.	Park	"	650	150
Bentley & Kaye	Longroyd	"	8,000	2,000
J. and J. Haley	Northowram	"	1,400	—
W. Thwaites	Slaters	"	1,100	—
J. Brooke and Sons	Park	"	—	3,000
P. Normanton & Co.	Blue Ball	"	1,800	600
Midgley & Roper	Long Close	"	1,560	—
Cookson and Ellis	Needless Hall	"	1,000	—
E. S. Vint & Co.	Summerfield	"	280	—
Saville Holmes	New Road	"	1,700	—
Scotgate Ash Company	Scotgate Ash	"	5,897	—
D. and C. Roper	Guide Moor	"	1,050	155
S. Cliffe & Sons	Branston Street	"	1,734	—
Blackburn & Co.	School Field	"	850	150
			42,744	16,510
			16,510	
		Stone	59,254	
P. W. Spencer	Raygill	Barytes	146	—
Gill Head Mining Company	Appletreewick	Lead	—	—
Reed and Williams	Black Gill	"	7	—
Hutchinson and Williams	Cockhill & Sunnyside	"	—	—
Hutchinson and Burnaby	Stoney Groves	"	—	—
Cradock, Appleby & Co.	Blayshaw Gill	"	—	—
J. Cradock & Co.	Linby	"	140½	—
Ditto	Lolly Scarr	"	557½	—
			705	
		Total	60,105	—

Reports of Assistant Inspectors.

Sir, Outwood, Wakefield, 21st February 1895.

I have the honour to report that during the past year I have exercised the duties of Inspector of Mines in the district comprising Yorkshire and Lincolnshire, and that in so doing I have acted as assistant to and under the direction of Mr. Frank N. Wardell, the Chief Inspector.

I am, &c.
(Signed) JAMES MELLORS.

The Right Honourable H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

Sir, Leeds, February 1895.

I have the honour to report that during the past year I have exercised the duties of Inspector of Mines in the district of Yorkshire and Lincolnshire, and that in so doing I have acted as assistant to and under the direction of Mr. Frank N. Wardell, the Chief Inspector.

I have, &c.
(Signed) J. R. ROBINSON WILSON.

The Right Honourable H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

REPORT

OF

ARTHUR H. STOKES, Esq., H.M. INSPECTOR OF MINES

FOR THE

MIDLAND DISTRICT (No. 8),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887, the Metalliferous Mines Regulation Acts, 1872 and 1875, and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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1895.

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Mr. A. H. Stokes' Report.

REPORT on the INSPECTION of MINES in the MIDLAND DISTRICT, comprising the counties of Derby, Leicester, Nottingham, and Warwick, under the Coal Mines Regulation Act. Also the counties of Bedford, Berks, Buckingham, Cambridge, Derby, Hertford, Huntingdon, Leicester, Northampton, Nottingham, Oxford, Rutland, and Warwick, under the Metalliferous Mines Regulation Acts: By A. H. STOKES, Esq., F.G.S.

SIR, Green Hill, Derby, February 1895.

I HAVE the honour to submit the following reports upon the work of inspection of mines, and of my proceedings as Inspector of Mines, in charge of the Midland District, during the year 1894, together with a detailed list of fatal accidents and other tabulated statistical information relating to mining generally. Such reports being made in accordance with section 43 of the Coal Mines Regulation Act, 1887, and section 20 of the Metalliferous Mines Regulation Act, 1872.

The quantity of mineral wrought during the year is considerably in excess of that raised in the preceding year, and is the largest output ever recorded in the Midland District, viz., 21,890,658 tons.

The preceding year (1893) will be memorable for the long cessation of work which took place in the autumn of that year, and it is to this cause that the quantity of mineral raised during 1894 is so far in excess of the year 1893. It is even in excess of the quantity raised in the year 1892, and shows the steadily increasing development of the mineral industry when not interfered with by trade disputes. There is every prospect of a further development of the coal-producing power of the district, should the trade of the country demand an increased supply of coal.

The following table gives the number of persons employed in and about the mines of this district compared with the previous year:—

Year.	Underground.			Aboveground.				Total Underground and Aboveground.
	Ages 12 to 16.	Ages above 16.	Total.	Ages 12 to 13.	Ages 13 to 16.	Ages above 16.	Total.	
1893	5,143	55,996	**61,139**	17	1,349	15,254	**16,620**	**77,759**
1894	5,026	58,063	**63,089**	6	1,499	15,560	**17,065**	**80,154**
Increase -	—	2,067	**1,950**	—	150	306	**445**	**2,395**
Decrease -	117	—	—	11	—	—	—	—

The number of persons employed belowground is 63,089, being 1,950 in excess of the number so employed in the previous year, and the number employed aboveground is 17,065, or an increase of 445 when compared with the year 1893.

During the year there have been 52 accidents causing a loss of 52 lives; there being only one life lost for every fatal accident. This is a decrease of six lives when compared with the previous year, and is the lowest number of deaths in any one year since 1879.

There has been no loss of life from explosion of firedamp during the year.

The following table shows the number of DEATHS due to accidents under various heads:—

Year.	Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous Underground.	On Surface.	Total.
1893	2	26	5	17	8	**58**
1894	—	34	2	10	6	**52**
Decrease -	2	—	3	7	2	**6**
Increase -	—	8	—	—	—	—

The number of persons employed per life lost is 1,541 as compared with 1,315 in the previous year, showing 17 per cent. in favour of the past year, but by taking the tons raised per life lost, we have 420,974 tons for 1894 as compared with 277,255 in 1893, showing 51 per cent. better result for the year 1894.

It is with pleasure that I call attention to the highly satisfactory result of the year's work as regards accidents, and whilst regretting the loss of 52 lives, I have to record the lowest number of lives lost since the year 1879. This, in itself, would be encouraging, considering the great increase in the number of persons employed and tons of mineral raised, but I have further to record that whilst no life has been lost from explosion of firedamp during the year, we have the large number of 420,974 tons of mineral raised per life lost; a death-rate tonnage never attained before in the Midland District, and I believe never equalled in any inspection district in the Kingdom.

It is an unprecedented record of a year's work in mining, and shows what discipline, rules and regulations, and improved methods in mining can do when supported by the willing co-operation of owners, agents, managers, and workmen, all anxious to increase the safety of the mine and its surroundings.

The following table gives the quantities of the various minerals raised as compared with the previous year:—

Year.	Coal.	Fire-clay.	Ironstone.	Shale and other Minerals.	Total.
1893	15,951,572	115,615	9,094	4,496	**16,080,777**
1894	21,744,658	130,752	9,236	6,012	**21,890,658**
Increase -	5,793,086	15,137	142	1,516	**5,809,881**
Decrease -	—	—	—	—	—

The quantity of coal raised during the year was 21,744,658 tons, an increase of 5,793,086 tons as compared with the previous year, and it is the largest output of coal ever raised in one year in the district.

The total quantity of all kinds of mineral raised was 21,890,658 tons, an increase of 5,809,881 tons, as compared with the year 1893.

The death-rate for the year in this district is one for every 420,974 tons of mineral raised and in the United Kingdom it is one death for every 176,975 tons.

The following table shows the lives lost, and tons raised per life lost, in and about mines under the Coal Mines Regulation Act in Great Britain during the year 1894.

—	Inspection District.												Great Britain.
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire.	Manchester.	Liverpool.	Midland.	North Stafford.	South Stafford.	South-western.	South Wales.	
Lives lost	70	49	78	89	100	51	72	52	27	50	49	440	1,127
Tons of mineral raised per life lost.	207,342	206,105	276,122	317,071	239,697	210,961	219,763	420,974	273,135	189,526	229,678	55,758	176,975

From the above table the Midland District stands first when compared with other districts as regards the quantity of minerals raised per life lost during the year.

A detailed summary of deaths caused by accidents during the year will be found in Table No. 4, page 24, and a comparative table of the relative death-rate due to the working of mines since the commencement of the work of inspection, will be found on Table No. 2, page 23.

TABLE No. 1.

The following table shows a comparison of the number of LIVES LOST per tons of mineral RAISED in the United Kingdom and the Midland District for the years 1868 to 1894:—

Date.	Tons of MINERAL raised.		DEATHS.		Tons of MINERAL raised per Death.	
	In the United Kingdom.	In the Midland District.	In the United Kingdom.	In the Midland District.	In the United Kingdom.	In the Midland District.
1868	104,566,959	7,699,265	1,011	60	103,429	128,321
1869	108,003,482	8,100,000	1,116	78	96,777	103,846
1870	112,875,525	8,366,000	991	50	113,900	167,320
1871	117,439,251	9,252,900	1,075	93	109,246	99,494
1872	123,393,853	10,657,100	1,060	79	116,409	134,900
1873	128,544,400	11,533,307	1,069	78	129,843	147,837
1874	126,214,368	12,232,296	1,056	55	119,521	222,405
1875	133,306,485	12,430,600	1,244	65	108,918	191,240
1876	148,989,385	12,500,055	933	77	159,688	162,338
1877	148,874,244	13,071,566	1,208	58	123,240	225,372
1878	145,789,138	13,575,320	1,413	55	103,257	246,824
1879	145,366,369	14,144,265	973	47	149,400	300,942
1880	161,466,793	14,623,260	1,318	59	122,509	247,852
1881	168,959,931	15,657,148	954	64	177,106	244,643
1882	171,334,032	15,702,084	1,126	138	152,161	113,783
1883	178,763,390	16,767,797	1,054	74	169,605	226,592
1884	174,872,759	16,198,131	942	55	185,390	294,511
1885	173,223,960	17,074,243	1,150	73	150,629	233,894
1886	170,006,959	16,854,312	953	63	178,391	267,528
1887	173,049,795	17,311,646	995	68	173,919	254,583
1888	182,660,163	18,201,685	888	61	205,698	298,388
1889	189,633,656	19,845,942	1,064	64	178,227	310,093
1890	194,605,887	20,659,836	1,160	65	167,763	317,856
1891	197,693,592	21,713,691	979	60	201,934	361,894
1892	191,954,908	21,726,122	982	73	195,473	297,618
1893	175,236,857	16,080,777	1,029	58	170,298	277,255
1894	199,451,018	21,890,658	1,127	52	176,975	420,974

The quantity of minerals wrought in the years 1876–1894 includes coal, ironstone, and clay.

COKE.

I have this year been able to ascertain the number of coke ovens at work, and the quantity of coke made during the year 1894. I give the information in tabulated form for easy reference.

COKE made in the MIDLAND DISTRICT, and number of COKE OVENS at work during the year 1894.

Derbyshire.		Leicestershire.		Nottinghamshire.		Warwickshire.	
Number of Coke Ovens at work.	Coke made.	Number of Coke Ovens at work.	Coke made.	Number of Coke Ovens at work.	Coke made.	Number of Coke Ovens at work.	Coke made.
1,046	Tons. 250,908	Nil.	Tons. Nil.	174	Tons. 56,516	Nil.	Tons. Nil.

Total coke ovens, 1,220. Tons of coke made, 307,424.

The principal coke-making part of my district is North Derbyshire. There are no coke ovens in either Leicestershire or Warwickshire, and only a few in Nottinghamshire.

There is a small quantity of coke made in open hearth, which has been included in the above totals.

INSPECTION OF MINES.

Inspection by H.M. Inspectors.

My time has been fully occupied during the whole of the year in discharging the duties relating to my office as Inspector in charge of the district.

I have attended 23 inquests, and personally investigated the circumstances under which the deceased persons received fatal injuries or were killed on the spot.

I have also investigated a number of important non-fatal accidents.

During the year I have visited 219 mines for the purpose of either surface or underground inspection, or matters relating to the safety and discipline of persons engaged at the mine. I have further been occupied in investigating workmen's complaints, magisterial inquiries, Special Rules, and various other matters relating to the effective administration of the provisions of the Mines Act.

I have been officially engaged from home on 309 days, and have travelled by road and rail a distance of 15,336 miles.

I have had no holiday during the year.

My assistants and myself continue to make visits to mines without notice to managers of the intended inspection, and I believe that at least two underground inspections, more or less complete, have been made of all the coal mines in my district during the year. The larger mines have received more than two visits.

My assistants have made 475 underground inspections during the year, a large number being visits of systematical inspection. In the smaller mines they have inspected every working place, and in the larger mines a district or portion of a district.

The statistical information relating to the mineral raised and persons employed has passed through my hands, and I have supervised the tabulation of the same for publication. The desire for early statistical information increases the work of compilation, if returns are delayed beyond the statutory time owing to neglect or forgetfulness. In some cases they have to be returned for omitted or inaccurate information. I trust that in future all persons whose duty it is to make a statutory return will do so with as little delay as possible after the close of the period for which such return is due.

Mr. W. H. Hepplewhite and Mr. H. R. Hewitt continue to assist me in the work of inspection, and I have again pleasure in stating that both my assistants have rendered me valuable and willing help during the year.

Their time has been principally occupied in making underground inspections, and investigating the cause of accidents in and about mines. The number of underground inspections made by each Inspector is recorded in the analysis of their work given below. Many of the inspections are heavy and laborious, for it is the bad and defective parts of a mine, if any, that they search for, and not the easy travelling and well kept main roads of the workings. Both my assistants have discharged their duties with prompt and satisfactory service during the year.

I have been supplied by each Inspector with the following epitome of the work he has done during the year.

Mr. Hepplewhite reports :—

"I have made 265 underground inspections during the year.

"I have also made 25 surface inspections, attended 14 inquests, and was occupied on 17 days with office work and appointments in connexion with the duties of my office.

"I was officially engaged on 309 days during the year, and travelled 15,200 miles by rail and road whilst upon official employment.

"I have had no holiday during the year."

Mr. Hewitt reports :—

"I have made 210 underground inspections during the year.

"I have attended 20 inquests, and made 30 surface inspections of mines.

"During the year I have been engaged on 38 days attending various official appointments, office work, Special Rules, and magisterial investigations.

"I travelled 12,594 miles by rail and road, and was officially engaged on 294 days.

"I have had 15 days leave of absence from my duties during the year.

The above record of official work requires no comment on my part.

Inspection by Workmen.

The inspection of mines by workmen in accordance with the powers conferred upon them by General Rule No. 38, must either be very satisfactory, or they fail to avail themselves of their right to make such inspections, for no copy of any reported danger, or the apprehended existence of any danger, has been forwarded to me during the year.

The above named General Rule does not require a copy of every report of workmen's inspection to be sent to the Inspector, but only in cases where such report states the existence, or apprehended existence, of any danger. A few inspections by workmen have been made, and recorded in the book kept at the mine, and they generally state that the mine is all

safe, plenty of timber available, and that no gas was found. This indicates that the inspection is principally devoted to timbering and absence of noxious gases.

Workmen's Complaints.

A number of workmen's complaints, both signed and anonymous, have reached me during the year. Every case has been investigated with the least possible delay, and where irregularity of practice or breach of the rules has been discovered, it has been brought to the notice of the owners and manager of the mine at once.

All communications from workmen are considered confidential, and their investigation is conducted in such a manner that it shall not point to the informant, or lead to his becoming known.

Some of the workmen's complaints received by me are of a curious nature, involving matters which cannot possibly be arranged or dealt with by an inspector of mines, such as wages, club pay, dismissal, and fighting in the mine. Workmen should understand that the primary duty of an inspector of mines is to promote and enforce a due observance of the provisions of the Mines Act and rules, and that whilst he would willingly offer his services to promote good feeling and pecuniary increase, yet he can scarcely be expected to investigate wages disputes, sick club pay, and other matters of a similar nature.

ACCIDENTS.

Time of Shift in which Accidents occur.

In the list of fatal accidents attached to this Report (Appendix II.) will be found the actual time each accident occurred, and the following tabular statement shows the total number of fatal accidents for each hour of the shift during the year.

HOURS of the SHIFT, that is during what HOUR after the commencement of their SHIFT the FATAL ACCIDENTS happened to PERSONS employed in and about the MINES of the MIDLAND DISTRICT.

Hour of the Shift.	UNDERGROUND.													ABOVEGROUND.												
	1st Hour.	2nd Hour.	3rd Hour.	4th Hour.	5th Hour.	6th Hour.	7th Hour.	8th Hour.	9th Hour.	10th Hour.	11th Hour.	12th Hour.	More than 12 Hours.	1st Hour.	2nd Hour.	3rd Hour.	4th Hour.	5th Hour.	6th Hour.	7th Hour.	8th Hour.	9th Hour.	10th Hour.	11th Hour.	12th Hour.	More than 12 Hours.
Total deaths - -	3	8	6	5	7	4	4	7	–	–	1	–	1	–	1	1	1	1	–	–	1	–	1	–	–	–
Per-centage - -	·06	·17	·13	·11	·15	·08	·08	·15	–	–	·02	–	·02	–	·16	·16	·16	·16	–	–	·16	–	·16	–	–	–

The greatest number of accidents underground occurred in the second hour of the shift, and the whole of these accidents were from falls.

One accident underground occurred in the eleventh hour of the shift, and in this case it was the enginewright of the colliery who was superintending the erection of machinery in the mine, when a large fall of roof occurred and killed him. The accident happened on a Sunday evening.

One accident occurred underground when the man had been at work more than 12 hours. The duty of the deceased was to attend a pumping engine at an intermediate seam in the shaft, and he was entering the cage after having finished his day's work, when he fell down the shaft.

Explosions of Firedamp.

I am pleased to report that no death from explosion of firedamp has occurred in the district during the year.

There have been six non-fatal explosions during the year, which will be found recorded in Table No. 7. All the explosions were of a slight nature, and the circumstances under which they occurred will be found described under the head of remarks in the above-named table.

An explosion occurred in a heading being driven by a heading machine worked by compressed air. In such cases it is customary to rely upon the exhaust air to ventilate the heading, but care should be taken to provide for ventilation when the machine is not at work

or under repairs. Such headings must be constantly ventilated, and if compressed air cannot be relied upon, then other means must be provided.

Falls of Roof and Side.

The number of deaths from falls is 34, or 8 more than last year, an increase of considerable extent if viewed in point of numbers, but the previous year was an abnormal record due to the 16 weeks cessation of work in mines. If we compare the tons of mineral raised per life lost from falls we obtain quite a different view of the comparison of results, for whereas in the year 1893 there were 618,491 tons raised per life lost from falls, there were 643,843 tons raised last year for every life lost from falls; hence we have an increase in numbers, but a better death-rate when compared with the tons raised per life lost.

Many of the accidents are due to unforeseen circumstances over which the deceased had no control, but in some cases the life would probably have been saved had the rules of the mine been strictly carried out.

Accident No. 18.—The deceased was a boy tramming coal in a small mine, and his death appears to have been due to his loaded tub catching a prop on the side of a roadway, knocking it out and liberating the roof.

The roadways of a mine should always be sufficiently wide to allow a good margin of space between the tubs passing along the roadway and the timber set at the side of the roadway for the purpose of supporting the roof. Managers and officials of mines should pay particular attention to prevent the timbering of roadways being too near the tubs when passing along the road, for should a loaded tub strike a prop, with sufficient force to liberate it, there may be danger to the horse and the driver.

Accident No. 28.—In this case the deceased was a pony driver, and was assisting to convey an empty tub in a heading for the purpose of being loaded with roof coal. The coal fell upon him.

Upon investigation there was found sufficient evidence to gravely suspect that the tub was being pushed under the roof coal, so that it might fall into the tub without the trouble of being loaded by hand.

Accident No. 37.—This is one of many cases, both fatal and non-fatal, which occur to men withdrawing timber by knocking it out with a hammer, instead of using a ringer and chain, as required by the Special Rules of the mine. Had the deceased man in this case acted in accordance with the rule which was in force with regard to the removal of props, it is very probable that his life would have been saved.

Accident No. 51.—Upon inspecting and investigating this accident, there was little doubt that the deceased man had taken out the holing sprags for the purpose of "slotting" the coal, and afterwards resumed holing without having re-set the holing sprags, probably thinking that certain long timber used for supporting the upper portion of the seam would be sufficient protection. The lower portion of the seam fell upon deceased whilst holing it.

The remainder of the accidents from falls have occurred under circumstances fully described in the list (Appendix II.).

The large loss of life from falls which is yearly recorded calls for serious consideration. It is the great danger incident to mining, and therefore a constant endeavour should be exercised by both officials and workmen to see if it cannot be reduced to a minimum. Those deaths which occur, accompanied by a direct breach of rule, cast reflection upon the discipline of the mine; and, therefore, whenever an official finds men withdrawing timber contrary to the rule of the mine, he should report it to the manager, so that measures may be taken to prevent a repetition of such a practice. No set of rules can be framed to govern every contingency which may arise, but the rules that are in force should be strictly adhered to, and those appointed to see that such rules are observed should be themselves the first to report any neglect to carry them out.

The setting and re-setting of holing sprags should be strictly enforced, and wherever coal has stood partly holed for some time, and holing resumed, there should be additional sprags set for protection.

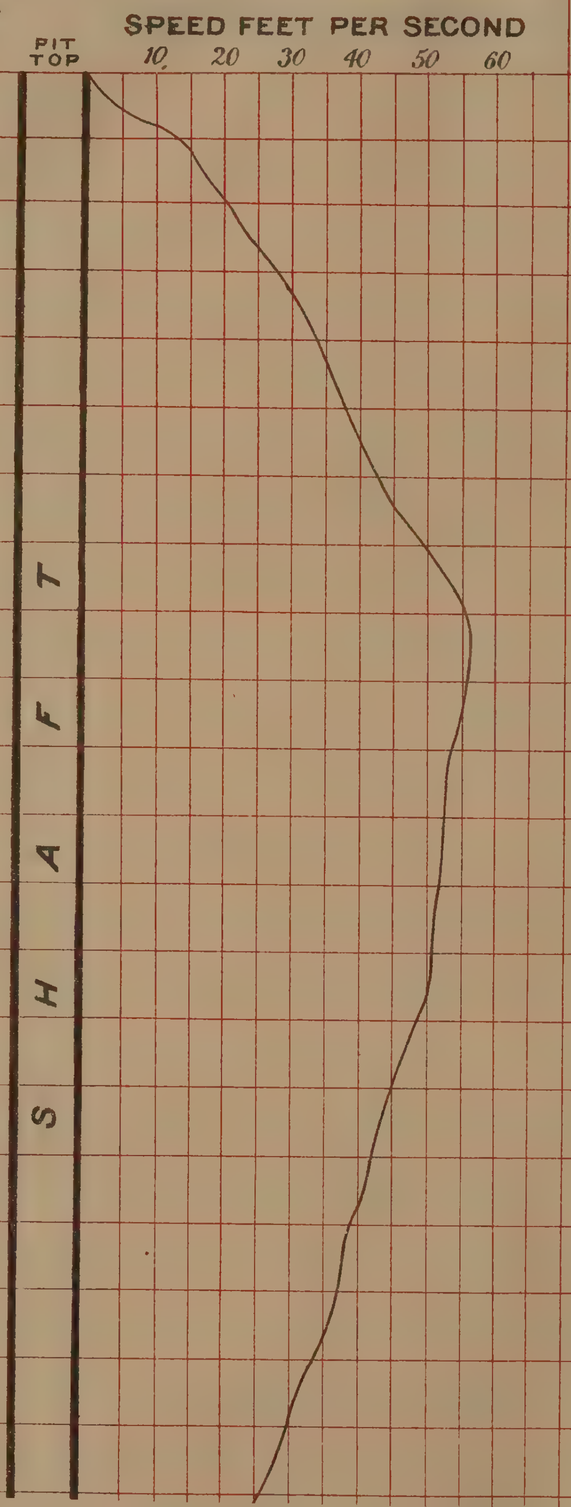
I seldom find a scarcity in the supply of timber for the use of workmen in their working places, and such supply being gratuitously provided, it is incumbent upon the workmen that they should not hesitate to liberally use it for the protection and safety of themselves and others working in the mine.

If accidents from falls are to be reduced, it must be by the joint action of both officials and workmen; officials to see that a supply of suitable timber is provided and used, and workmen to anticipate danger by fixing and maintaining a sufficient quantity to secure the safety of the working place.

DIAGRAM SHOWING SPEED OF WINDING MEN IN A SHAFT.

Depth of Shaft 430 yards.
Diameter of Winding Drum 18 feet, or 56·54 feet Circumference.
Time of Winding from Start to Finish 35 to 45 seconds.
Highest speed 54·89 feet per second.
Speed when one Rev. of the Drum from the Top 13·10 feet per second.
12 Men at one time.

RAISING CAGE WITH 12 MEN FROM BOTTOM TO TOP OF THE SHAFT



REVOLUTIONS OF THE DRUM.	AVERAGE SPEED FOR EACH REV. OF THE DRUM. FT. PER SECOND.	SPEED AT THE END OF EACH REV. OF THE DRUM. FT. PER SECOND.
23	7·96	13·10
22	18·23	20·84
21	23·40	27·42
20	31·41	33·37
19	35·33	37·71
18	40·10	42·66
17	45·23	48·79
16	52·35	53·62
15	54·89	54·36
14	53·84	52·64
13	51·44	51·44
12	51·44	50·96
11	50·48	50·48
10	50·48	48·41
9	46·34	44·91
8	43·49	42·53
7	41·57	39·63
6	37·69	37·44
5	37·19	34·30
4	31·41	30·43
3	29·44	26·59

Shafts.

There have been two deaths from accidents in shafts, or three less than the previous year.

Accident No. 27.—The deceased man was engaged to attend a pumping engine fixed in an intermediate seam of coal in the shaft; he had finished his work, and went to the shaft for the purpose of ascending. At this time the day-shift of men was being lowered, and his fellow engineman entered the cage at the surface, together with eight others. The engineman had instructions to stop at the intermediate seam, so that the relief man could get off, and afterwards lower the eight men down to the working seam. The men descended all right, the relief man got off, and saw deceased waiting to get on the cage. An attempt was made to complete the change of men, but just as deceased was getting on the cage it commenced to descend with the eight workmen; the man missed his hold, and fell forward to the bottom of the shaft. He had attempted to give a signal and then get on the cage, instead of allowing his fellow engineman to ring him away when safely on the cage.

The ingress and egress of workmen at an intermediate seam in a working shaft is best accomplished by a direct run of the cage either to or from the surface, and the mixing of men in one cage for delivery at various points in the shaft is likely to give rise to a confusion of signals, and, as in this case, to a fatal accident.

Accident No. 45.—The deceased man was a blacksmith, who was ascending the shaft with a long iron bar. Instead of having it passed through the top of the cage, and in a vertical line with the winding rope, he held it on the edge of the cage; the bar caught in the brick-work of the shaft side, and, in trying to set it at liberty, the deceased overbalanced and fell down the shaft.

SPEED OF WINDING IN SHAFTS.

The suggested limitation of the hours of labour in mines, and the economic necessity for maintaining the daily quantity raised, is leading managers to expedite the movements of workmen when going to and returning from their work. The descent and ascent of the large number of persons who now work in extensive and deep mines necessarily occupies a considerable period of time every day, and therefore there is a growing tendency to accelerate the speed of winding men in shafts, due partly to the large number of persons, and partly to the growing desire to reduce the hours of absence from bank to bank.

It was customary years ago to wind men at half the speed of coal winding, and in the present code of Special Rules the engineman, "when persons are in the shaft, he shall drive the engine at reduced speed," but "reduced speed" appears to be an unknown quantity, and I find in deep mines there is little reduction in speed when men are riding.

For the purpose of more clearly indicating the velocity of the cage at various points in the shaft when winding men at a deep mine, I have prepared a diagram which gives the speed at each revolution of the drum, and which has been compiled from a number of experiments made for the purpose of ascertaining the rate of speed of the cage when raising men from a deep mine. (*See* diagram.)

From this diagram it will be seen that at one point in the shaft the men travel at the rate of 37 miles per hour, a vertical speed of great velocity. When we consider what a few accidents occur in lowering and raising the great number of men who daily work in mines, it is highly creditable to the class of enginemen who work the engine, and shows the command they have over the machinery under their charge, and the skill and ability they exercise in safely landing the numerous loads of human freight with almost infallible precision. This is done without sight of the cage after it leaves the pit top, depending solely upon the pointer of an indicator to show the position of the load in the shaft until they see the cage issue at the top of the shaft.

The diagram shows that directly after starting away the engineman endeavours to quickly gain speed, whereas the last two revolutions show his care in reducing the speed to a controllable velocity when nearing the pit top.

The speed of coal winding in the same shaft is only a little faster, the time gained being in some part due to the high velocity maintained to a considerable distance nearer the pit top than when winding men. In coal winding the engineman's object is to start away as quickly as possible, and run with the highest speed up to the last moment, then to pull up and land his cage with the least possible delay.

In cases where both shafts are available for the daily ingress and egress of workmen to the mine, the time occupied in lowering and raising men is considerably reduced, and at all large mines where a great number of workmen have to daily descend and ascend, it is desirable that both shafts should be supplied with equal facilities for lowering and raising

the workmen, and this arrangement should be kept in view at all future sinkings for mines of large extent.

Explosives.

Eight non-fatal accidents have occurred from the use of explosives. All might have been avoided with ordinary care.

A workman using the old-fashioned "german" ignited the end instead of the match. The use of gunpowder fuse would have prevented this accident.

A youth found a detonator cap used for firing dynamite, and, wishing to use it for a pencil cover, he attempted to clean it out, when it exploded, doing serious injury to his hand.

The whole of the non-fatal accidents from explosives will be found in "Table No. 8," with some explanatory remarks, describing the result of investigation as to how they occurred.

A curious case of double-shot firing took place in the coal heading of a mine, and but for immediate attention might have been attended with serious results. The men driving the heading, which was 10 feet wide, charged a shot-hole with gunpowder; this missed fire, and after standing about five hours, the men commenced to drill another shot-hole about 2 feet away, and in a direction slanting from the line of the missed shot; this second hole was duly charged, and the fuse lighted by an official of the mine. It exploded, and at the same time ignited the gunpowder of the missed shot, both shots being fired almost instantaneously, creating such a large volume of flame in the heading as to set fire to the ventilating brattice-cloth, and but for prompt attention there would have been a serious fire in the mine; the heading was both dry and dusty, but the flame from the double shot did not fire the coal dust.

Miscellaneous Accidents.

Ten deaths due to accidents of a miscellaneous character have occurred underground during the year.

Accident No. 10.—This accident was due to a runaway tub which became detached from a train of tubs descending an engine-plane. A train of tubs travelling up an inclined roadway can be protected by a back-stay behind the last tub, and equally so a train descending an inclined roadway can be secured against one or more tubs becoming detached by the use of an over- or under-chain, running from end to end of the train. In my opinion all trains of tubs descending inclined planes should be prevented from one or more tubs becoming detached by the use of an over- or under-chain. Such chains are largely and successfully used in many mines in the district, and effectively prevent the escape of uncoupled tubs.

Accident No. 21.—In this case the deceased was a horse driver, and whilst taking a train of full tubs down a roadway of slight descent and walking behind the train, four other full tubs, which had run away from the pass-bye on the same roadway, followed and crushed deceased between the tubs. The evidence at the inquest showed that it was the duty of another driver to put the stop-blocks across the rails to protect the roadway after the deceased had gone away with his full train, and to prevent tubs running down the inclined roadway; but at the time of the accident such blocks had been neglected by the person whose duty it was to affix them, and thus the road was free for any tub to follow the preceding train of tubs. In this case four full tubs came into the pass-bye, and should have stopped at the blocks, but these being left open the full tubs passed forward and caught up the preceding train, which the deceased only a few minutes before had taken away. At the inquest the jury returned a verdict that the accident was caused by the culpable negligence of the person in charge of the stop-blocks, and he was committed to Warwick Assize on a charge of "manslaughter." At the Assize the case came before Mr. Justice Wills, when the grand jury threw out the bill, and the prisoner was discharged.

The other miscellaneous accidents underground will be found recorded in the list (Appendix II.).

Accidents on the Surface.

There have been six deaths due to accidents on the surface.

Machinery Accidents.

Accident No. 32.—The deceased man was assisting to repair the screen tippler connected with an endless bel for coal-loading, and whilst under the belt the machinery was started

and drew the deceased under. When machinery is under repair it should be the special duty of someone in charge to see that all is clear before the engine is started.

Accidents by Railway Waggons.

Two deaths are due to the deceased being run over or crushed by railway waggons.

Accident No. 8.—The deceased was a shunter, and whilst attempting to make a "fly" shunt he fell from the foot-brake of the engine and was run over. "Fly" shunting had been strictly prohibited, and deceased was breaking the rules at the time of the accident.

Accident No. 31.—In this case the deceased was attempting to put a sprag through the spokes of a railway waggon whilst in motion, when he stumbled and fell under the waggon.

COAL DUST.

The Royal Commission on Explosions from Coal Dust in Mines having completed their labours and issued their report, it becomes the duty of persons having the management of dry and dusty mines to study the result of the Commissioners' investigations, and consider any remedial measures suggested to meet the dangers which have been proved to exist, or may be anticipated from the accumulation of coal dust in dry and dusty mines.

I had hoped that the Commissioners would have more decidedly dealt with the remedial measures to be adopted, and suggested clear and practical rules and regulations for statutory enactment instead of leaving the inspector to set in motion the slow, cumbersome, and costly mode of arbitration when he is of opinion that the provision for watering dust in a mine is insufficient, together with the onerous duty of classifying the fiery or dry and dusty mines in his district.

The Commissioners took a large amount of evidence, but unfortunately the perusal of such evidence shows that a diversity of opinion existed upon the use of explosives and the danger from coal dust in mines. There, however, appeared to be an unanimity of opinion, that an explosion of firedamp once started in a dry and dusty mine, was materially intensified and extended by the dry coal dust distributed along the roadways of the mine. The Commissioners in their report state that they "cannot doubt the possibility of an explosion from "coal dust alone, even in mines where no gas has ever been known to exist." Having once arrived at the conclusion that dry coal dust is dangerous in mines, it then becomes necessary to suggest the remedial measures necessary to prevent the ignition of such dry coal dust as exists in and about the roadways of a mine, and for this purpose we have three courses for consideration, viz., to remove the dust, or render it non-inflammable, or to prohibit the conditions which may give rise to a flame that will ignite the dust.

The Commissioners report that "there appears to be no probability that a dangerous "explosion of coal dust alone could ever be produced in a mine by a naked light or ordinary "flame." This materially limits the extent of the inquiry and reduces the danger to two questions, viz., blasting and explosions of firedamp.

Blasting.

In mines which are naturally in a wet or moist condition, and not liable to inflammable gas there appears no reason for limiting the use of gunpowder, but the investigations indicate that in dry and dusty places, or places where locked safety-lamps are used, all explosions which, although firmly tamped with non-carbonaceous matter, give off flame on blowing should be discarded altogether, and gunpowder being one of such explosives, it appears necessary that stringent precautionary measures should be enforced to govern its application for shot-firing in mines. Some dusts are more inflammable than others, but it would be impracticable to classify them, and recent experience has shown that the dust on the roadway of a mine, in which gas is unknown, has been ignited by the flame of a gunpowder shot with fatal results; it therefore appears necessary to class all dry and dusty mines under one code of restrictive regulations with respect to explosives.

Blown-out Shot.

If the tamping of a shot offers less resistance than the force generated by the combustion of the explosive, and the mineral in which the shot is inserted does not give way, then the stemming is forced out and we get a blown-out shot; such may occur at the moment of complete combustion when the greatest force is exerted, or it may occur before the complete combustion has developed its full power, and in such cases a blown-out shot of gunpowder would emit a flame of considerable length which might ignite gas or fine coal dust; such flame may be the result of the complete ignition of the whole charge, or if the stemming gives

way before the whole charge is consumed, there may be partially burned grains or pellets ejected from the shot hole; and where compressed powder, in bobbins of considerable size, is used, with the fuse attached to the bobbin at the back of the hole, it is questionable, in case of the stemming being blown out, if the partly burned front bobbins are not ejected to be finally consumed in the atmosphere. We have also to consider that blown-out shots occur either from being insufficiently stemmed, or overcharged for the amount of work they have to do, or by being unskilfully placed; but from whatever cause they may occur, the flame from the shot or unconsumed portion is the danger that must be securely guarded against.

High Explosives.

Many advances have been made within the last few years towards the production of an absolutely flameless explosive, but up to the present I am not aware that such an explosive exists, although there are several which give a high degree of safety when properly used. There are a number of high explosives in the market, a few claiming to be flameless under the severest test if properly tamped, but all appear to be liable to failure when impartially tested under exceptional conditions which might occur in a mine.

The multiplicity of patents and explosives which exist must be embarrassing to most managers, and their selection of a particular explosive for use appears to be guided by a matter of opinion rather than one of scientific proof.

In the selection of an explosive two points must be kept in view, viz., safety and economy. The safety is narrowed to a small compass by saying that an ideal explosive for mines should be flameless and not give rise to noxious gases. The economy embraces numerous details and the best explosive is such as gives the results required at the least cost, not excluding the boring of the shot-hole.

Many experiments have been made both at home and abroad to test the safety of high explosives, and the reports when compared and analysed are interesting but confusing, in consequence of the contradictions respecting the ignition or non-ignition of the surrounding atmosphere, under artificial conditions made for the purpose of the experiment. Explosives fired under apparently similar conditions do not always give the same result and an explosive which for 99 times fails to ignite the gas or dust-laden atmosphere may do so at the 100th trial. In some cases the severest test may be passed without flame, whereas a less severe test would ignite the atmosphere.

The name of a high explosive is no guide whatever to its safety or efficiency for mining purposes, and its limit of safety must be determined by experiments in which the elements of danger found in a mine are artificially produced, and although the results of such experiments may be contradictory, conflicting or intensified beyond what could be realised in practice in a mine, yet the results of such experiments must, in the absence of better data, be the controlling influence when selecting an explosive for use in mines. There can be little doubt that the employment of high explosives in dry, dusty, and fiery mines, under stringent rules as to their application and conditions of firing, would greatly limit the risk attendant upon the blasting operations in a mine.

Quality of Explosive.

The quality of an explosive is a material factor with respect to its safety. Gunpowder, when used, should be of an equal compositien, and not contain less than a stated percentage of saltpetre, thoroughly incorporated and of a certain sized grain. The high explosives should also be of a uniform mixture enclosed in a preservative description of cartridge, so that a charge of cartridges may all be detonated when the shot is fired, and no portion allowed to remain unconsumed, either at the end of the shot-hole or amongst the mineral blown down by the shot of which it formed a part.

Mode of Firing.

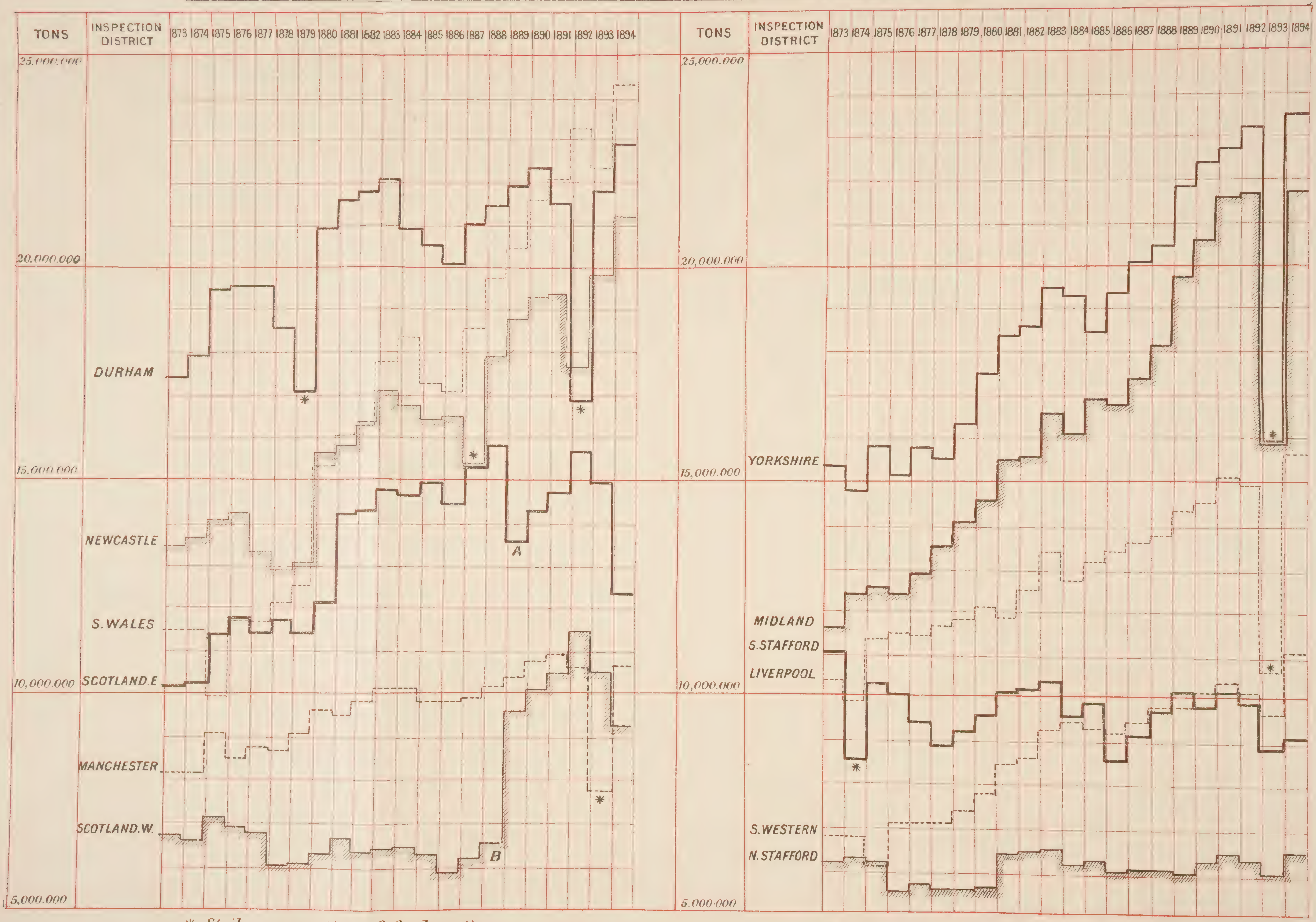
It must be clear to all persons that the firing of a supposed flameless high explosive by means of an ordinary gunpowder fuse, which at the time of "striking" will ignite gas, if any be present, is an incongruity which must cease, and that where safety explosives are used, they should be fired by electricity or other means which will not ignite fire-damp.

Removal of Dust.

The roadways of dry and dusty mines upon which coal is conveyed are not only more or less coated with the finest of coal dust, adhering to the roof and sides, and filling the inter-

Diagrams showing quantities of Coal raised in each Inspection District from 1873 to 1894.

Note. To prevent confusion of lines the quantities have been drawn upon two Diagrams of equal scale.



* Strike or cessation of Coal getting.

A. B. East and West Scotland districts re-arranged

* Strike or cessation of Coal getting.

A. H. Stokes.

H. M. INSPECTOR OF MINES.

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stices between the strata and timbers, but frequently a large amount of coarser dust rests upon the roadway which might be removed with advantage to the working of the mine generally. Large accumulations of dust should not be allowed to remain upon the floor of the haulage roadways of a mine.

Watering.

The watering of the dusty roadways of a mine appears to me to be a matter which might be more effectively carried out than at present. In some cases a tub of water, with a plug hole in the bottom, is conveyed along the roadway and emptied, whilst being drawn along by a pony or haulage rope. Such watering is confined to the dust between the rails, and is of little use beyond making the part watered in a wet condition underfoot. The best system of watering appears to be by spray jets at short intervals along the haulage roadway, supplied by water under pressure, and thoroughly saturating the atmosphere. Such watering keeps the atmosphere of the haulage roadways as free as possible from dust. It also moistens the dust on the roadway, and is of value for the health and comfort of the men working at the coal-face, for instead of receiving a dust laden atmosphere from the intake roadway, they get the ventilation as free as possible before it enters the working places.

A system of spray watering along the main haulage roads of dry and dusty mines should be adopted wherever practicable; it would be far better than the intermittent and erratic tub system, and if judiciously applied would materially improve the ventilation, and facilitate the removal of the dust when being collected from the floor of the haulage roads.

Examination and Firing.

In dry and dusty mines in which locked safety-lamps are used, the examination of a place where a shot is to be fired and all contiguous accessible places, should in no case be neglected because a supposed flameless explosive is used, such examinations should be made by the person whose duty it is to fire the shot, and the shot should not be fired unless he finds it safe for firing. In such mines all shot-firing should be done by the officials of the mine.

COAL RAISED IN EACH INSPECTION DISTRICT.

The quantities of coal raised in each inspection district is given annually in detail of counties in the summaries of statistics, but the mass of figures necessary to record such information does not convey a ready mode of grasping the relative output of each district, and further, such figures represent only the year for which they are issued, whereas by using a diagram for recording such quantities we may show at a glance the yearly rate of increase or decrease, and the relative yearly quantities compared with other districts for a number of years.

I have prepared such a diagram for this Report, and trust that it may be found a useful and comprehensive mode of illustrating the quantities of coal raised in districts.

We may make the following comparisons by the use of this diagram.

1. The increase in the output of the Midland District, compared with similar increases in other districts, shows that this district has contributed largely to the output of the whole of the Kingdom.

2. The serious effect of a cessation of work upon the amount of mineral raised, showing that the previous year's decrease was equalled by only one other district in the country, and that no district suffered more than this by such a stoppage of coal raising, and further that although labour disputes have occurred in other districts in previous years, yet never with such disastrous results as regards the output of coal raised.

3. The diagram shows the rise and fall of quantities as a trade chart, indicating that this district has received a large share of the increased trade during the term of years shown. It also affords a ready mode of comparison between any two years with respect to the coal trade demands.

COAL RAISED IN COALFIELDS.

The large increase in the yearly output of coal which has been recorded in the Inspector's Reports suggests the inquiry as to which coalfields are such increases principally due, or, are all the coalfields of Great Britain supplying their pro rata share of the increased quantity. To answer this question would require a mass of figures extending over many years, and difficult to grasp when issued in a tabulated form, whereas by a diagram such information can be given in a compact and easy form for reference or comparison.

The coal raised in each inspection district does not, except in a few cases, give the quantities raised in coalfields, and for this purpose a special tabulation of figures is necessary, in some cases embracing the whole or part of an inspection district.

The accompanying diagram has been prepared from the Inspector's returns and arranged in coalfields.

We see from the diagram that the Midland Coalfield, of which a large portion of the Midland District forms a part, has the largest output, and its yearly increase is not surpassed by any other coalfield.

The smaller coalfields, such as Warwick and Leicester, remain almost stationary.

The diagram shows that the Derbyshire, Nottinghamshire, and Yorkshire coal seams, which form the Midland coalfield, are being developed at a steady rate. To this coalfield we anticipate an increased and long continued output of coal.

The yearly increase in the output of coal is in a large measure due to the development of a few of the coalfields; a number of coalfields of small area have remained almost stationary with respect to the yearly quantity of coal raised.

Number of Days in each Month on which Coal has been drawn.

The annual return to be filled up by the owner, agent, or manager, and sent to the Inspector, provides for the number of days in each month on which coal or ironstone has been drawn, to be given for the year, and from such returns I have tabulated the following information:—

Average number of days worked, 1894.

County.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total for the Year.
Derbyshire - - -	23¼	18¾	17¾	17½	18¼	18¾	17¼	17½	18	21	19	18	225½
Leicestershire - - -	24½	17	15½	15¾	15½	16¼	15½	15½	16¾	18¾	16½	15¼	203
Nottinghamshire - -	22¼	16¾	15¼	18	17¾	18½	17	16	16	19	16	15½	208
Warwickshire - - -	24¾	18¾	18¼	18¼	19	19	19¼	18½	19¼	22¼	19¾	19	236

Technical Education.

The county councils of Nottinghamshire and Warwickshire continue the work of technical instruction in mining, and their lectures have been a decided success. Men working at the coal face, after having attended a course of three years class tuition have successfully obtained an under manager's certificate, and a large number of youths and men have received instruction which must materially assist them in their labour, and lead them to become skilled in their daily calling.

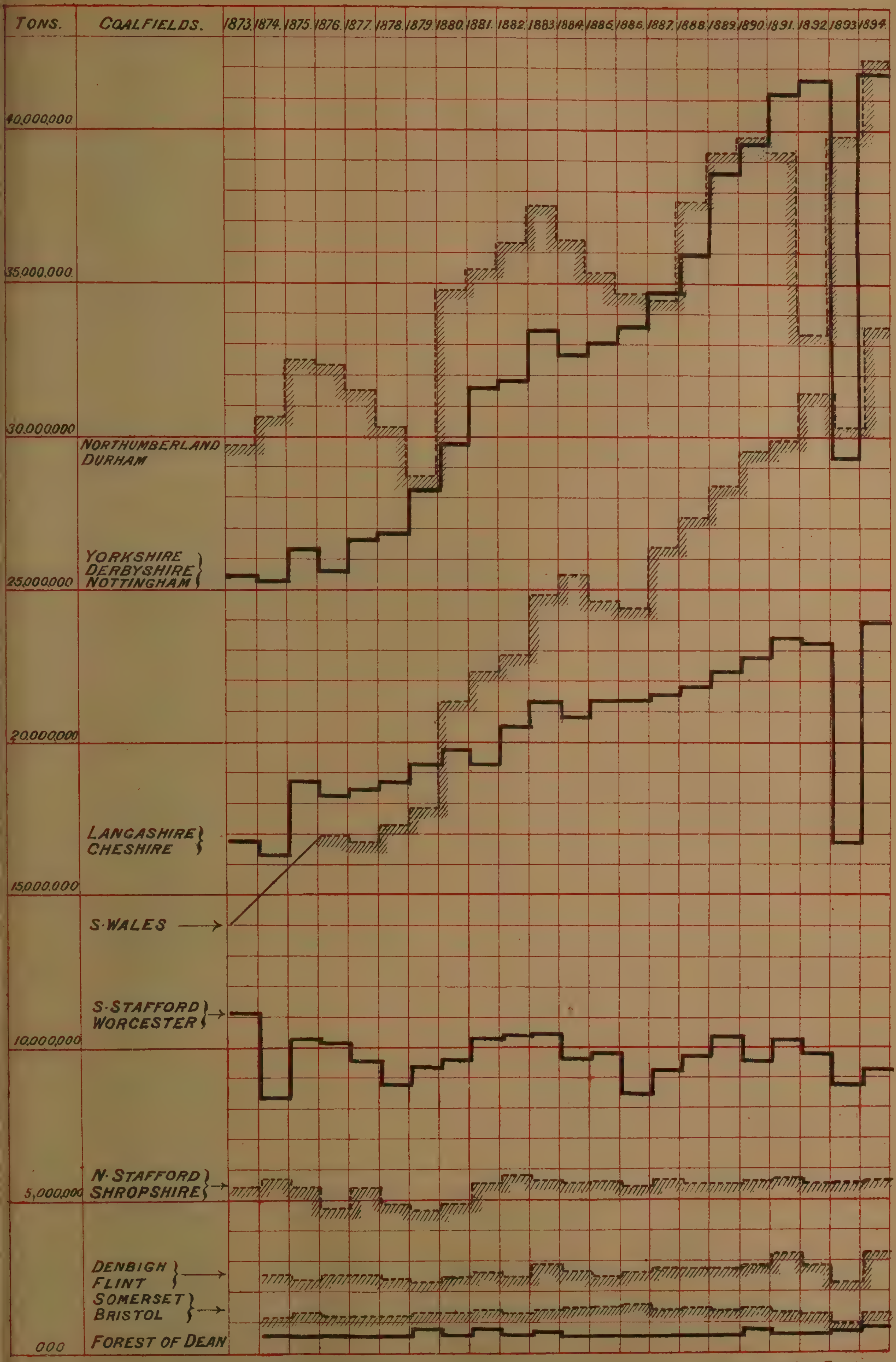
The conclusion of last sessions' work completed the three years course of study in accordance with the scheme adopted by the county councils, and the classes are this year, for the first time, conducted so as to include three grades of proficiency, and supply both elementary and advanced tuition.

The following is the result of the last examination of students:—

Nottinghamshire. Lecturers: Messrs. H. Stoker and C. Latham.						Warwickshire. Lecturer: Mr. G. M. Bailes.					
Elementary.		Advanced.		Honours.		Elementary.		Advanced.		Honours.	
Students Examined.	Students obtained Certificates.	Students Examined.	Students obtained Certificates.	Students Examined.	Students obtained Certificates.	Students Examined.	Students obtained Certificates	Students Examined.	Students obtained Certificates.	Students Examined.	Students obtained Certificates.
136	116	64	34	91	30	37	31	17	14	16	5

The classes are this year being well attended at the various centres throughout the counties; not the least successful being those for the honours students and persons anxious to obtain managers' and under-managers' certificates.

Diagram showing the COAL raised from the English and Welsh COALFIELDS.



From the year 1873 to 1894 the maximum or minimum quantity raised in any one year in the following COALFIELDS *was*

WARWICKSHIRE	MAXIMUM 1,950,519	TONS	MINIMUM 803,851	TONS
LEICESTERSHIRE	" 1,528,589	"	" 832,504	"
CUMBERLAND and WESTMORELAND	" 2,060,101	"	" 1,037,571	"

A. H. Stokes

H.M. INSPECTOR OF MINES.

PROSECUTIONS.

Prosecutions by H.M. Inspector of Mines.

I regret that I have once during the year considered it my duty to ask for your sanction to take legal proceedings for a breach of the provisions of the Coal Mines Regulation Act, 1887.

During the general cessation of work in the latter part of the year 1893, a considerable number of small mines on the outcrop of the seams of coal were opened by men of small means, and who soon closed them when the larger mines resumed work. I had great difficulty in obtaining plans of the workings, and in one case I could not get the plan until legal proceedings had been taken against the owner for neglect to comply with the requirements of the 38th section of the Mines Act.

Date.	Person summoned.	Nature of Offence.	Result of Hearing.	Amount. Fine.	Amount. Costs.
				£ s. d.	£ s. d.
1894. 1st September -	Owner -	Failed to forward the plan of an abandoned mine.	Convicted -	1 0 0	0 8 6

Prosecutions of Workmen.

The following prosecutions of workmen have been reported to me during the year, in accordance with section 66 of the Coal Mines Regulation Act, 1887 :—

Date.	Occupation of Offender.	Nature of Offence.	Rules.	Result of Hearing.	Amount. Fine.	Amount. Costs.
1894.					£ s. d.	£ s. d.
Jan. 5	Stallman -	Leaving over-hanging coal unspragged.	Sp. Rule 72 -	Convicted	0 10 0	0 19 6
" 8	Clipper on rope road.	Interfering with a signal -	Sp. Rule 64 -	"	0 10 0	0 9 6
" 9	Stallman -	Did not examine place after firing a shot.	Sp. Rule 49 -	Dismissed	—	—
" 9	" -	Having a safety-lamp key in his possession.	Sp. Rule 55 -	Convicted	1 10 0	0 9 6
" 9	Driver -	Having an unlocked safety-lamp in his possession.	Sp. Rule 55 -	"	1 0 0	0 9 6
" 9	" -	" " " -	Sp. Rule 55 -	"	0 10 0	0 7 6
" 20	Jigger -	Neglecting to attach the rope to three full tubs.	Sp. Rules 91 and 22.	"	0 3 6	1 16 6
" 23	Stallman -	Neglecting to set timber -	Sp. Rule 75 -	"	1 0 0	0 10 6
" 23	" -	Ramming a shot with an iron crowbar.	Gen. Rule 12(e)	"	2 0 0	0 10 6
" 23	" -	Neglecting to set timber -	Sp. Rule 70 -	"	1 1 0	0 9 6
Feb. 2	" -	Holing without sprags -	Sp. Rule 72 -	"	0 10 0	0 10 4
" 2	Holer -	" " -	Sp. Rule 72 -	"	0 7 6	0 11 4
" 2	" -	" " -	Sp. Rule 72 -	"	0 7 6	0 11 4
" 5	Stallman -	Allowing over-hanging coal to remain unspragged.	Sp. Rule 72 -	"	0 10 0	0 10 6
" 5	" -	Unramming a shot which had missed fire.	Gen. Rule 12(e)	"	1 0 0	0 10 6
" 6	" -	Having matches in his possession	Sp. Rule 63 -	"	0 5 0	0 9 6
" 17	Holer -	Passing beyond a danger signal	Sp. Rule 82 -	"	0 6 0	0 14 0
" 17	" -	Opening a safety-lamp	Sp. Rule 57 -	"	0 4 0	0 16 0
" 24	Stallman -	Having a safety-lamp within 2 feet of the swing of the pick.	Sp. Rule 58 -	"	0 6 0	0 14 0
Mar. 3	" -	Not setting sufficient timber -	Sp. Rule 67 -	"	0 10 0	0 8 6
" 3	" -	" " " -	Sp. Rule 67 -	"	0 10 0	0 8 6
" 3	" -	" " " -	Sp. Rule 67 -	"	0 10 0	0 8 6
" 31	" -	Failing to set sprags to over-hanging coal.	Sp. Rule 72 -	"	1 1 0	0 12 0
April 5	Loader -	Disobeying onsetter's directions	Sp. Rule 127 -	"	1 0 0	0 15 6
" 5	" -	Neglecting to use a stop-block	Sp. Rule 79 -	"	0 10 0	0 9 6
" 17	Horse driver	Not carefully conveying his tubs.	Sp. Rule 94 -	"	0 1 0	0 12 6

Date.	Occupation of Offender.	Nature of Offence.	Rules.	Result of Hearing.	Amount. Fine.	Amount. Costs.
1894.					£ s. d.	£ s. d.
April 21	Holer	Not setting holing sprags	Sp. Rule 73	Convicted	0 1 0	0 9 6
" 21	Horse driver	Riding down an incline	Sp. Rule 78	"	Nil	0 9 6
" 21	"	" "	Sp. Rule 78	"	Nil	0 9 6
" 21	"	" "	Sp. Rule 78	"	Nil	0 9 6
" 21	"	" "	Sp. Rule 78	"	Nil	0 9 6
" 21	"	" "	Sp. Rule 78	"	Nil	0 9 6
" 21	Stallman	Not setting sufficient holing sprags.	Sp. Rule 72	"	0 1 0	0 15 0
May 7	"	Removing a brattice-cloth	Sp. Rule 80	"	0 10 0	1 6 6
" 7	Incline man	Neglecting to use a stop-block	Sp. Rule 92	"	0 2 6	0 9 6
" 7	"	" " "	Sp. Rule 92	"	0 2 6	0 9 6
" 12	Horse driver	Neglecting to close a ventilation door.	Sp. Rule 76	"	0 1 0	0 11 6
June 2	Dataler	Unlocking a safety-lamp	Sp. Rule 57	"	0 5 0	0 11 6
" 7	Incline man	Not seeing that the tubs were properly coupled together.	Sp. Rule 92	"	0 10 0	0 14 6
July 10	Stallman	Having matches in a place where safety-lamps were used.	Sp. Rule 55	"	1 0 0	0 9 6
" 31	Contractor	Using a naked light where safety-lamps were used.	Sp. Rule 55	"	0 10 6	0 6 6
Aug. 4	Horse driver	Unlocking a safety-lamp	Sp. Rule 57	"	0 2 6	0 18 0
" 20	Stallman	Neglecting to set holing sprags	Sp. Rule 72	"	0 9 6	0 11 6
" 20	"	" " "	Sp. Rule 72	"	0 9 6	0 11 6
" 20	Stoker	Found asleep whilst in charge of steam boilers.	Sp. Rule 103	"	1 0 0	0 15 6
" 20	Engineman	Found asleep whilst in charge of fan-engine.	Sp. Rule 98	"	0 10 0	0 14 6
" 20	Loader	Improperly using a safety-lamp	Sp. Rule 57	"	0 0 6	0 19 6
Sept. 29	Holer	Not setting sufficient holing sprags.	Sp. Rule 73	"	0 5 0	0 14 0
Oct. 2	Stoker	Neglecting the fan-engine	Sp. Rule 105	"	1 10 0	0 10 6
" 6	Loader	Having a tobacco pipe in his possession.	Sp. Rule 55	"	0 5 0	0 14 6
" 18	Dataler	Improperly using a safety-lamp	Sp. Rule 57	"	0 5 0	0 10 6
" 18	Horse driver	" " "	Sp. Rule 57	"	0 5 0	0 10 6
" 20	Holer	Neglecting to set holing sprags	Sp. Rule 73	"	0 8 0	0 12 0
" 25	Day man	Impeding the ventilation by building a pack.	Sp. Rule 80	"	1 0 0	0 9 6
" 25	Horse driver	Ill-treating a horse by striking it with an iron locker (under Cruelty to Animals Act).	—	"	0 5 0	0 10 6
Nov. 3	Stallman	Not setting sufficient sprags	Sp. Rule 72	"	0 5 0	0 12 6
" 13	Horse driver	Interfering with an electric signal.	Sp. Rule 64	"	0 2 6	0 8 0
" 13	"	" " "	Sp. Rule 64	"	0 2 6	0 8 0
" 20	"	Passing through a fence	Sp. Rule 89	Dismissed	—	—
" 22	Holer	Giving a signal without authority.	Sp. Rule 64	Convicted	Nil	0 10 6
" 24	Stallman	Neglecting to set holing sprags	Sp. Rule 72	"	0 11 0	0 10 0
" 29	"	Interfering with battice-cloth and allowing gas to accumulate.	Sp. Rule 76	"	0 10 0	0 14 6

Mineral Statistics.

The whole of the statistics relating to mineral worked from open works in my district, and usually published in the annual volume of Mineral Statistics, have been again collected and tabulated by me for publication. Such statistics will next year be compulsory from quarries under the Quarries Act, but for minerals worked from quarries not under the Act I shall again have to rely upon the kindness of those owners who have in previous years voluntarily supplied me with the information.

I have, &c.,

ARTHUR H. STOKES,

Her Majesty's Inspector of Mines.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall, London.

Managers' and Under-Managers' Certificates.

The examination for certificates was held at Nottingham on the 25th, 26th, and 27th October, when 53 candidates presented themselves for examination, mostly persons engaged in mining in the district.

RETURN of the number of candidates who presented themselves at the several examinations, showing the number passed by the Examiners since the passing of the Mines Act, 1872.

Date of Examination.	Managers.		Under-Managers.	
	Number of Candidates.	Number passed.	Number of Candidates.	Number passed.
1873.—May 13th and 14th	30	20	—	—
1874.—January 8th and 9th	47	34	—	—
1874.—July 9th and 10th	23	4	—	—
1875.—January 13th and 14th	14	6	—	—
1875.—October 28th and 29th	26	12	—	—
1876.—October 24th and 25th	24	7	—	—
1877.—October 30th and 31st	13	5	—	—
1878.—October 30th and 31st	14	3	—	—
1879.—October 27th and 28th	16	9	—	—
1880.—October 21st and 22nd	11	4	—	—
1881.—October 27th and 28th	22	8	—	—
1882.—October 26th and 27th	13	7	—	—
1883.—October 25th and 26th	10	2	—	—
1884.—October 30th and 31st	13	4	—	—
1885.—October 29th and 30th	13	3	—	—
1886.—October 28th and 29th	21	7	—	—
1887.—October 27th and 28th	18	7	—	—
1888.—October 24th, 25th, and 26th	9	3	124	110
1889.—October 23rd, 24th, and 25th	8	3	70	52
1890.—October 30th, 31st, and November 1st	10	5	57	25
1891.—October 29th, 30th, and 31st	10	3	68	35
1892.—October 27th, 28th, and 29th	23	5	61	24
1893.—October 26th, 27th, and 28th	16	9	41	25
1894.—October 25th, 26th, and 27th	23	9	30	18
	427	179	451	289

The Board for the appointment of examiners meet at Nottingham once in each year. They appoint gentlemen of known experience and integrity to examine the several applicants for managers' and under-managers' certificates of competency. The subjects are arranged by the Board, leaving the separate questions for the examiners. The Secretary of State has directed that the examinations for this district shall be held in the month of October in each year.

Since the passing of the Mines Regulation Act of 1872 four hundred and twenty-seven candidates have presented themselves, and one hundred and seventy-nine were considered qualified and obtained official certificates of the first class. In the second class, four hundred and fifty-one have been up for examination, and two hundred and eighty-nine obtained certificates as under-managers.

Board for the Appointment of Examiners.

The following gentlemen constitute the Board for the appointment of examiners:—

Colliery Owners - - { Charles Seely, Esq., Sherwood Lodge, Notts (Chairman).
F. B. Wright, Esq., Wootton Court, Warwick.
J. P. Jackson, Esq., Stubben Edge, Chesterfield.

Mining Engineers, &c. &c.	J. A. Longden, Esq., Stanton-by-Dale, near Nottingham. W. Spencer, Esq., Southfields, Leicester. George Lewis, Esq., Derby.
Three persons not being Owners, Agents, &c. of mines.	Mr. Davies, Awsworth, Notts. Mr. Jacob Allen, Hartshill, Nuneaton. Mr. Chambers, Newthorpe, Notts.
Her Majesty's Inspector of Mines.	A. H. Stokes, Esq., Derby.

Board for Examinations for the Mining Districts of Derbyshire, Leicestershire, Nottinghamshire, and Warwickshire.

Sir, Wilson Street, Derby, 18 .

I am directed by the Chairman of the Board for Examinations for these districts to inform you that the Secretary of State has been pleased to order the next examination of candidates for certificates of competency within the above districts to be held in the town of Nottingham, on the day of October next, and that such examination will be held accordingly at the University Buildings in Nottingham on that day, commencing at nine o'clock in the morning.

It will be necessary for you to present yourself punctually at the hour appointed.

The following gentlemen have been appointed examiners:—

Reuben Smallman, Esq., M.E., Nuneaton, Warwickshire.
S. C. Wardell, Esq., M.E., Doe Hill House, Alfreton.
W. H. Sankey, Esq., M.E., Morley, near Derby.

It is impossible to fix beforehand the length of time which the examination may occupy, but it is not probable that your attendance will be required for more than two days.

Managers.

For First Class Certificates the subjects fixed for examination are the following:—

1. Writing. (Upon the Coal Mines Regulation Act, 1887, and the Special Rules of the District in which the candidate resides.)
2. Arithmetic.
3. The winning and working of mines of coal, mines of stratified ironstone, mines of shale, and mines of fire-clay.
4. Machinery.
5. Ventilation.
6. Safety of mines and miners; and opening works after having been closed for a period.
7. Surveying and plans.
8. The treatment of injured persons as recommended by the St. John Ambulance Association.

Note.—Candidates holding certificates from Government Science and Art Classes, or from the Nottingham University College, or from the St. John's Ambulance Association, should produce them to the examiners at the examination.

The candidates will be examined in reading, and will also be examined *vivâ voce* upon all the foregoing subjects.

Upon the question of the qualification of candidates for First Class Certificates, the Board for Examinations has passed the following Resolution:—"That, in their opinion, no "candidate shall be considered to have a practical experience in a Mine, for five years, "unless he has been for that time regularly engaged in connexion with actual Colliery "Management."

Under-Managers.

For Second Class Certificates the subjects fixed for examination are the following:—

1. Writing. (Upon the Coal Mines Regulation Act, 1887, and the Special Rules of the District in which the candidate resides.)
2. Reading.
3. Arithmetic.
4. The use of the Anemometer, Barometer, and Water Gauge.

5. Ventilation, and the use of Safety-lamps.
6. The practical working of Mines (*vivâ voce* examination).
7. The treatment of injured persons as recommended by the St. John Ambulance Association.

Note.—Candidates holding certificates from Government Science and Art Classes, or from the Nottingham University College, or from the St. John's Ambulance Association, should produce them to the examiners at the examination.

General Instructions.

Persons who do not reside in the district are equally eligible for examination with those who do.

All candidates must be of the full age of 23 years. Section 23, sub-section (1), of the Coal Mines Regulation Act, 1887, provides that—

"No person shall be entitled to a Certificate under this Act unless he shall have had practical experience in a mine for at least five years."

Satisfactory evidence in the testimonials must be produced as to this.

Every candidate for examination for a certificate of competency will be required to sign an undertaking to keep the information contained in the examination papers strictly private and confidential, and also engage not to take a copy of any portion of such paper, or publish the same in any way.

If any candidate, at the time of examination, be found making use of books, memoranda, notes, copying, or obtaining information from other candidates, he will be disqualified, and his authorization for examination cancelled.

It will be necessary for you, before your examination can be proceeded with, to produce to the Examiners—

1. Your authorization from the Secretary of State to appear for examination.
2. A statement of the situations you have filled during the last five years, or longer period, to which a declaration must be appended that all the allegations are true; such declaration being signed by you in the presence of one witness, whose name and address must be given.
3. A certificate of sobriety and general good conduct, signed by either a clergyman, or other minister, or a magistrate; and also separate certificates from two respectable residents in his district, and whose addresses must be given.
4. A certificate of ability and experience from the employer, if any; or from two competent persons (mining engineers or others) acquainted with mining operations.

You must address your application for authority to appear before the Examiners, to Her Majesty's Principal Secretary of State for the Home Department, Whitehall, London, S.W. (See Form annexed.)

I am, Sir,
Your obedient Servant,
William Saunders,
Secretary.

Certificates of Competency.

The fee to be paid by an applicant for Examination is—

(1.) For a First Class Certificate of Competency, 2*l*.
(2.) For a Second Class Certificate of Competency, 1*l*.

Any person desirous of being examined must make an application to the Secretary of State, in the form hereunder set forth, enclosing therein a Post Office Order, or Postal Note, for the fee of 2*l*. or 1*l*., as the case may be, in favour of Carey Knyvett, Esq., C.B., Home Office, Whitehall, London, S.W., made payable at the General Post Office, London. The

applicant will then receive from the Home Office an authority to present himself for examination before the Examiners appointed for the District.

FORM OF APPLICATION FOR EXAMINATION.

Date ____________________

Full Postal Address ____________________

____

SIR,

I BEG to inform you that I am desirous of presenting myself to be examined by the Examiners for the district of for a (First or Second Class) Certificate of Competency as (Manager or Under-Manager) of a mine, and I enclose a Post Office Order for the sum of 2*l.* (or 1*l.*).

I am, Sir,
Your obedient Servant,

____

To The Right Hon. the Secretary
of State for the Home Department,
Whitehall, London, S.W.

To be accompanied by statement on paper of foolscap size :—

1. Name and address, in full, of applicant for (First or Second Class) Certificate.
2. Name of the District in which the applicant wishes to be examined.

TABLE No. 2.

TABLE showing the ratios of separate FATAL ACCIDENTS and LIVES LOST to the Number of PERSONS EMPLOYED and MINERAL RAISED during the 39 years ended 31st December 1894.

Year.	Number of separate Fatal Accidents.	Number of Lives Lost.						Persons Employed.		Minerals raised in Statute Tons.	
		Explosions of Gas.	Falls of Roof and Side.	In Shafts.	Miscellaneous Underground.	Above-ground.	TOTAL.	Per Separate Fatal Accident.	Per Life Lost.	Per separate Fatal Accident.	Per Life Lost.
1856	42	3	21	16	3	3	46	—	—	107,143	97,826
1857	32	15	14	6	18	2	55	—	—	148,437	86,363
1858	33	—	16	12	13	1	42	—	—	153,333	120,476
1859	35	2	18	13	7	—	40	—	—	155,142	133,250
1860	40	3	21	13	11	2	50	—	—	155,125	124,300
1861	43	3	21	15	30	—	69	—	—	151,240	94,251
1862	42	2	25	4	11	1	43	—	—	158,262	154,581
1863	48	4	26	9	12	1	52	—	—	145,833	134,615
1864	64	11	30	9	14	2	66	415	403	114,063	110,606
1865	74	9	36	13	16	8	82	366	330	102,371	92,383
1866	55	7	26	5	13	7	58	493	467	138,182	131,034
1867	59	4	25	11	20	4	64	457	422	128,814	118,750
1868	58	1	24	9	22	4	60	483	466	132,741	128,317
1869	70	6	31	12	22	7	78	407	365	115,714	103,846
1870	47	2	22	6	16	4	50	613	576	178,000	167,320
1871	56	42	31	5	12	3	93	554	334	185,234	99,494
1872	74	7	38	8	20	6	79	531	497	144,015	134,900
1873	75	4	39	10	24	2	79	618	594	155,155	149,263
1874	52	3	26	6	21	2	58	953	903	227,727	215,948
1875	66	1	27	18	18	3	67	795	783	191,558	188,699
1876	66	6	46	8	13	4	77	793	679	189,394	162,338
1877	51	1	30	6	17	4	58	986	867	256,305	225,372
1878	49	—	31	11	8	5	55	1,007	897	277,047	246,824
1879	46	1	26	6	7	7	47	1,107	1,083	307,484	300,942
1880	56	—	35	5	11	8	59	881	836	261,130	247,852
1881	61	4	32	3	14	11	64	819	781	256,674	244,643
1882	61	70	34	6	24	4	138	818	361	257,411	113,783
1883	72	2	40	4	21	7	74	724	704	232,886	226,592
1884	55	1	31	4	11	8	55	969	969	294,511	294,511
1885	73	—	32	4	29	8	73	755	755	233,894	233,894
1886	56	2	33	8	11	9	63	985	876	300,969	267,528
1887	63	1	36	7	18	6	68	887	822	274,788	254,583
1888	60	—	38	4	12	7	61	966	949	303,361	298,388
1889	61	—	32	2	21	9	64	1,005	957	325,343	310,093
1890	64	—	32	8	17	8	65	1,039	1,022	322,809	317,856
1891	60	—	35	3	16	6	60	1,192	1,192	361,894	361,894
1892	69	—	42	8	16	7	73	1,082	1,022	314,871	297,618
1893	56	2	26	5	17	8	58	1,362	1,315	287,156	277,255
1894	52	—	34	2	10	6	52	1,541	1,541	420,974	420,974

NOTE.—The mineral raised in the years 1856–1872 is coal only.

TABLE No. 3.

ACCIDENTS.

SUMMARY of separate Colliery ACCIDENTS in the Midland District during the years 1873 to 1894.

——	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Explosions of firedamp.	4	3	1	1	1	—	1	—	4	4	1	1	—	1	1	—	—	—	—	—	1	—
Falls of roof -	37	23	26	41	29	29	26	32	30	34	40	31	32	31	34	37	31	31	35	40	26	34
Shafts -	10	6	16	7	6	7	5	5	3	4	4	4	4	7	4	4	2	8	3	6	5	2
Miscellaneous	24	20	21	17	15	13	14	19	24	19	27	19	37	17	24	19	28	25	22	23	24	16
Total accidents	75	52	64	66	51	49	46	56	61	61	72	55	73	56	63	60	61	64	60	69	56	52

TABLE No. 4.

DEATHS.

SUMMARY of DEATHS caused by accidents in the Midland District during the years 1873 to 1894.

Year.		Falls in the Mine.			In Shafts.									Miscellaneous Underground.							On Surface.					
	Explosions of Firedamp.	Falls of Side.	Falls of Roof.	TOTAL FALLS in the MINE.	Over-winding.	Ropes and Chains breaking.	Whilst ascending or descending by Machinery.	Falling into Shaft from Surface.	Things falling from Surface.	Falling from part way down.	Things falling from part way down.	Miscellaneous in Shafts.	TOTAL in SHAFTS.	Explosions of Gunpowder, &c.	Suffocation by Gases.	On Incline and Engine Planes.	By Trams and Tubs.	By Machinery Underground.	Sundries Underground.	TOTAL {MISCELLANEOUS UNDERGROUND.	By Machinery on Surface.	Boilers bursting.	Railway Sidings at the Mine.	Miscellaneous Surface.	TOTAL on SURFACE.	GROSS TOTAL.
1873	4	6	33	39	—	—	4	3	1	1	—	1	10	—	2	9	9	—	4	24	1	—	—	1	2	79
1874	3	5	21	26	—	2	2	—	—	2	—	—	6	2	8	6	8	1	1	21	2	—	—	—	2	58
1875	1	8	19	27	—	—	1	3	2	4	2	6	18	2	—	1	11	—	4	18	2	—	—	1	3	67
1876	6	13	33	46	2	—	3	1	—	1	1	—	8	2	—	4	7	—	—	13	3	—	—	1	4	77
1877	1	12	18	30	—	1	2	—	—	—	3	—	6	1	7	—	6	1	2	17	1	—	—	3	4	58
1878	—	11	20	31	—	1	1	1	—	—	6	2	11	1	—	2	5	—	—	8	2	—	—	3	5	55
1879	1	7	19	26	—	—	—	—	1	5	—	—	6	2	—	1	3	—	1	7	4	1	—	2	7	47
1880	—	8	27	35	—	—	1	—	2	—	—	2	5	1	—	5	4	1	—	11	1	—	—	7	8	59
1881	4	9	23	32	—	—	—	1	1	—	—	1	3	2	2	4	5	—	1	14	3	—	—	8	11	64
1882	70	9	25	34	—	1	3	—	—	—	—	2	6	2	9	5	7	—	1	24	1	—	—	3	4	138
1883	2	7	33	40	—	—	1	—	—	2	—	1	4	5	—	9	6	1	—	21	—	—	—	7	7	74
1884	1	8	23	31	1	—	—	—	—	2	—	1	4	1	1	—	9	—	—	11	3	—	—	5	8	55
1885	—	7	25	32	—	—	—	—	2	1	—	1	4	1	—	8	16	1	3	29	3	—	—	5	8	73
1886	2	14	19	33	1	1	2	—	—	3	1	—	8	—	4	3	3	—	1	11	3	—	—	6	9	63
1887	1	10	26	36	4	—	—	—	1	2	—	—	7	1	—	6	7	1	3	18	1	—	—	5	6	68
1888	—	9	29	38	—	—	—	2	—	1	—	1	4	—	—	2	7	1	2	12	4	—	—	3	7	61
1889	—	14	18	32	—	—	2	—	—	—	—	—	2	1	1	9	6	1	3	21	—	—	8	1	9	64
1890	—	7	25	32	—	—	—	3	—	—	1	4	8	1	—	2	11	—	3	17	2	—	3	3	8	65
1891	—	7	28	35	—	1	2	—	—	—	—	—	3	1	—	2	10	—	3	16	—	—	5	1	6	60
1892	—	6	36	42	—	3	—	1	—	2	1	1	8	1	—	7	7	—	1	16	2	—	2	3	7	73
1893	2	13	13	26	—	1	1	—	—	—	1	2	5	2	2	4	3	—	6	17	3	—	4	1	8	58
1894	—	11	23	34	—	—	—	—	2	—	—	—	2	—	—	3	3	3	1	10	2	—	2	2	6	52

TABLE No. 5.

PERSONS EMPLOYED and MINERAL WROUGHT in the Midland District comprising the Counties of Derby, Leicester, Nottingham, and Warwick during the years 1873 to 1894.

Year.	Number of PERSONS EMPLOYED.			Quantity of MINERAL RAISED in Statute Tons.				
	Under-ground.	Above-ground.	TOTAL.	Coal.	Fire-clay.	Ironstone.	Shale and other Minerals.	TOTAL.
1873	36,544	10,430	46,974	11,533,407	29,860	228,520	—	11,791,787
1874	40,673	11,706	52,379	12,232,296	73,163	219,545	—	12,525,004
1875	40,789	11,688	52,477	12,430,600	61,469	150,700	84	12,642,853
1876	40,260	12,088	52,348	12,331,546	47,066	121,379	1,063	12,501,054
1877	38,788	11,497	50,285	12,903,886	61,779	103,551	2,350	13,071,566
1878	38,170	11,184	49,354	13,440,184	55,508	74,926	4,702	13,575,320
1879	39,222	11,701	50,923	14,036,242	64,227	40,127	3,669	14,144,265
1880	37,960	11,370	49,330	14,500,995	66,589	51,197	4,479	14,623,260
1881	38,365	11,614	49,979	15,545,667	61,543	47,137	2,801	15,657,148
1882	38,435	11,464	49,899	15,566,324	79,157	51,728	4,875	15,702,084
1883	40,310	11,808	52,118	16,637,304	77,258	48,242	4,993	16,767,797
1884	41,410	11,868	53,278	16,080,682	77,630	36,097	3,722	16,198,131
1885	42,989	12,174	55,163	16,963,684	77,122	29,386	4,051	17,074,243
1886	43,164	12,012	55,176	16,760,227	76,992	13,264	3,829	16,854,312
1887	43,594	12,304	55,898	17,214,907	85,089	7,758	3,892	17,311,646
1888	45,491	12,444	57,935	18,095,240	86,022	16,803	3,620	18,201,685
1889	48,305	12,974	61,279	19,712,868	107,969	21,404	3,701	19,845,942
1890	53,137	13,331	66,468	20,518,034	111,588	26,501	3,713	20,659,836
1891	57,056	14,484	71,540	21,569,151	117,456	22,425	4,659	21,713,691
1892	59,655	15,002	74,657	21,587,967	119,383	14,363	4,409	21,726,122
1893	61,139	15,133	76,272	15,951,572	115,615	9,094	4,496	16,080,777
1894	63,089	17,065	80,154	21,744,658	130,752	9,236	6,012	21,890,658

TABLE No. 5A.

SUMMARY of NON-FATAL ACCIDENTS reported under the Coal Mines Regulation Act during the year 1894.

County.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Derbyshire - - -	44	34	16	24	29	27	23	40	31	39	40	27	374
Leicestershire - - -	4	6	7	8	4	1	4	2	4	5	3	3	51
Nottinghamshire - - -	16	15	8	14	11	15	19	9	15	15	15	16	168
Warwickshire - - -	5	5	4	4	3	7	6	5	3	2	8	8	60
	69	60	35	50	47	50	52	56	53	61	66	54	653

TABLE No. 6.

TOTAL Number of DEATHS in the different COLLIERIES in the years 1865 to 1894.

Name of Colliery.	Owner's Name.	Total Deaths in 30 years.
Clay Cross	Clay Cross Iron and Coal Company	144
Staveley	Staveley Iron and Coal Company	122
Butterley	Butterley Iron and Coal Company	110
Renishaw Park	J. and G. Wells, Limited	75
Eastwood, High Park, &c.	Barber, Walker, & Co.	74
Sheepbridge, Norwood, Langwith, &c.	Sheepbridge Iron and Coal Company	68
Birley Vale	Sheffield Coal Company	55
Teversall, Pleasley, and Silver Hill	Stanton Iron Company	52
Cinderhill, Newcastle, &c.	Babbington Coal Company	51
Baddesley	W. S. Dugdale's Trustees	44
Tibshelf and Birchwood	Babbington Coal Company	39
Grassmoor	Barnes Brothers	38
Bretby and Newhall Park	Earl of Carnarvon	36
Whitwick and Ibstock	Whitwick and Ibstock Colliery Companies	35
Riddings	James Oakes & Co.	33
Moira, &c.	Lord Donington	29
Stanton	J. and N. Nadin & Co.	28
Blackwell	Blackwell Colliery Company	28
Albert	Derbyshire Silkstone Colliery Company	27
Swannington and Coleorton	Walker and Worswick	26
Pilsley	Pilsley Colliery Company	26
Hall End and Birch Coppice	Morris & Shaw	24
Annesley	Annesley Colliery Company	24
Hucknall Torkard	Hucknall Torkard Colliery Company	21
Shireoaks and Steetly	Shireoaks Colliery Company	21
Pinxton	Coke & Co.	19
Shipley	E. M. Mundy	19
Bedworth Charity	Bedworth Coal Company	19
Swadlincote and Cadley Hill	Hall and Boardman	17
Wollaton	Wollaton Coal Company	17
Amington and Glascote	Firmstone & Co.	17
Manners	Manners Colliery Company	17
Shirland	Blackwell Colliery Company	17
New Hucknall and Bentick	New Hucknall Colliery Company	17
Bestwood	Bestwood Iron and Coal Company	17
Kilburn	Kilburn Colliery Company	16
Netherseal	Netherseal Coal Company	16
Clifton	Clifton Colliery Company	16
Snibston	South Leicestershire Colliery Company	15
Coton Park	Coton Park Colliery Company	14
Cossall	Cossall Colliery Company	14
Griff	Griff Colliery Company	14
Boythorpe	Boythorpe Colliery Company	13
Granville	Granville Colliery Company	13
Swanwick	C. R. P. Morewood	12
Wingerworth	Wingerworth Coal Company	12
Wyken	Wyken Colliery Company	12
Digby	Digby Colliery Company	12
Donisthorpe	Checkland and Williams	12
Ellistown	J. J. Ellis' Trustees	11
Haunch Wood	Sir Alfred Hickman	11
Southgate	Shireoaks Colliery Company	10
Renishaw	J. and G. Wells, Limited	10
Unstone	Unstone Coal and Coke Company	10
Mapperley	Mapperley Colliery Company	10
West Hallam	West Hallam Colliery Company	10
Alma	G. H. Turner	10
Skegby	Skegby Colliery Company	10
Newstead	Newstead Colliery Company	10
Denby	W. D. Lowe	9
Oakwell	Ilkeston Colliery Company	8
Linby	Linby Coal Company	8
Cottam	Renishaw Iron Company	8
Holmewood	Hardwick Coal Company	7
Exhall	E. Wilson	7
Denby and Ryefield	Denby Iron Company	7
South Leicestershire	South Leicestershire Colliery Company	7
Staunton Harold	Staunton Colliery Company	7
Bolsover	Bolsover Colliery Company	7
Alvecote	Tamworth Colliery Company	7
Pooley Hall	Pooley Hall Colliery Company	6

Name of Colliery.	Owner's Name.	Total Deaths in 30 years.
Axedge and Thatchmarsh	Buxton Lime Company	6
Awsworth	Awsworth Colliery Company	6
Nuneaton	Nuneaton Colliery Company	6
Stockingford	Stockingford Colliery Company	5
Nailstone	F. Hall's, Trustees	5
Tibshelf and Blackwell	E. Chambers	5
Plumbley	J. and G. Wells, Limited	5
Old Swadlincote	Newhall Colliery Company	5
Craven, Coventry	W. S. & J. Harris	4
Coleorton	Checkland & Co.	4
Aspenshaw	Aspenshaw Coal Company	4
Ansley Hall	Ansley Hall Coal Company	4
Bagworth	Bagworth Coal Company	3
Birchvale and Thornsett	Thomas Bennett	3
Tame Valley	G. Skey & Co.	3
Marehay	Marehay Colliery Company (Fords)	3
Hockley Hall and Whateley	Hockley Hall Colliery Company	2
Pentrich	W. C. Haslam	2
Stanley Kilburn	Stanley Kilburn Colliery Company	2
Wilnecote Works	Geo. Skey & Co.	2
Trowell Moor	Dunn Brothers	2
Stoneyford and Pollington	James Oakes & Co.	2
Burned Edge and Bugsworth	L. & E. Hall	2
Dale	Stanton Iron Company	2
St. John's, Staveley	Staveley Silkstone Company	2
Peacock	Peacock Colliery Company	1
Heather	Heather Colliery Company	1
Brockwell	C. J. Saunders	1
Lodge	W. Hall	1
Streetfield	W. Worrall	1
Highfield	Theo. Pearson	1
Chisworth	Abel Clayton	1
Owl Cotes	Wingerworth Coal Company	1
Walton	James Pearson	1
Diminsdale	Diminsdale Colliery Company	1
Star Brampton	Mrs. A. M. Waterhouse	1

TABLE No. 7.

LIST of UNDERGROUND COLLIERY EXPLOSIONS in the MIDLAND DISTRICT during the Year 1894.

Date.	Name of Colliery.	Name of Seam.	No. of Persons injured. Non-Fatal.	No. of Persons injured. Fatal.	Height of Barometer at Time of Explosion reduced to Sea Level.	Remarks.
1894. Jan. 13	Granville -	Little - -	—	—	30·20 R	A loader went into a goaf and lighted a small quantity of gas which had accumulated in a hole in the roof. No one was injured.
„ 17	High Park -	Top Hard -	1	—	29·95 F	A loader passed through a fence and past a "danger" board for the nearest way to work. In doing so he went over a small fall and ignited some gas in the roof.
Feb. 12	Holme Close -	Tupton - -	2	—	29·25 R	The men were preparing to commence work when a small quantity of gas in the gate-end was ignited by one of their naked lights.
July 3	Pleasley - -	Top Hard -	2	—	30·25 R	A fall of roof occurred in a goaf, liberating a quantity of gas, which was driven forward, and ignited at a naked light in the stall.
Oct. 24	Newhall Field -	Woodfield -	1	—	29·70 F	The loader held a lighted candle into the gate-end lip, and ignited a quantity of gas.
Dec. 17	Old Diminsdale -	Dunsil - -	—	—	30·05 F	Two men went into the end of heading to repair the heading machine, when the lighted candle carried by one of them ignited a small quantity of gas. No one was injured.
	Total deaths by explosions -		—	—		
	Total injured by explosions -		6	—		

NOTE.—R indicates rising; S steady; and F falling Barometer.
3 explosions of gas—Rising barometer.
— „ „ Steady „
3 „ „ Falling „

TABLE No. 8.

LIST of ACCIDENTS from EXPLOSIVES in the MIDLAND DISTRICT during the Year 1894.

Date.	Name of Colliery.	No. of Persons injured. Non-Fatal.	No. of Persons injured. Fatal.	Remarks.
1894. Feb. 7	Langwith - - - -	—	—	A shot was placed in the face near to one which had missed fire. When this shot was fired it lighted the former one, and set the brattice-cloth on fire. No one was injured.
May 5	Ibstock - - - -	1	—	When firing a shot the stallman lighted the end of the "german" instead of the match.
„ 7	Newstead - - - -	1	—	A boy found a detonator, and, wishing to use it for a pencil cover, he commenced to clean it out, when the detonator exploded.
June 28	Markham No. 1 Pit - - -	1	—	A powder cartridge had been left on the floor near a shot-hole, when the fuse of the shot was lighted. The sparks fell upon the cartridge and ignited it.
Oct. 16	New Hucknall - - -	1	—	A stallman was holding some powder in his hand and near another workman, who was testing a piece of fuse with a candle. The sparks from the fuse flew on to the powder and ignited it.
Nov. 14	Moor Green - - - -	1	—	The stallman lighted a shot, and after a short interval, thinking that it had missed fire, he approached it, when it exploded.
Dec. 1	Bailey Brook - - -	1	—	The stallman was carrying some powder, when it ignited at a naked light he was also carrying.
„ 31	Clifton - - - -	1	—	Whilst charging a shot-hole a lighted candle fell from the face on to a cartridge of powder which was lying on the floor.
	Total deaths by explosives -	—	—	
	Total injured by explosives -	7	—	

TABLE No. 9.

LIST of MISCELLANEOUS EXPLOSIONS in the MIDLAND DISTRICT during the Year 1894.

Date.	Name of Colliery.	No. of Persons injured.		Remarks.
		Non-Fatal.	Fatal.	
1894. Oct. 16	Kirkby -	1	—	The stoker was pushing the unconsumed slack from the front to the back of a boiler fire, when some gas fired and burned him.
Dec. 4	Woodside, Shipley -	2	—	Whilst stoking a boiler some gas came out and burned two men.
„ 13	Langwith - - - -	—	—	About an hour after firing a gunpowder shot a flame was noticed behind the coal which had been blown down. The shot had evidently ignited a feeder of gas.
	Total deaths by miscellaneous explosions	—	—	
	Total injured by miscellaneous explosions.	3	—	

APPENDIX I.

SUMMARY of PERSONS EMPLOYED in and about the MINES, and TONS of MINING PRODUCE, in the MIDLAND DISTRICT, during the Year 1894 (including those employed on Private Branch Railways and in Washing and Coking Coal (C.)).

NAMES OF COUNTIES.	Underground (A.)			Aboveground—Ages. (B.)							Aboveground—Ages. (C.)							Total.	GROSS TOTAL	Coal.	Fire-clay.	Iron-stone.	Pyrites.	Mineral Oil.
	Male Persons—Ages.			12 to 13.		13 to 16.		Above 16.		TOTAL.	12 to 13.		13 to 16.		Above 16.		TOTAL.	above-ground.	above and below ground.					
	12 to 16.	Above 16.	TOTAL (A.)	Boys.	Girls.	Boys.	Girls.	Females.	Males.	(B.)	Boys.	Girls.	Boys.	Girls.	Females.	Males.	(C.)	(B.) (C.)	(A.) (B.) (C.)					
Derbyshire - -	2,908	31,055	33,963	3	–	786	–	–	7,432	8,221	–	–	40	–	–	793	833	9,054	43,017	11,472,579	40,450	8,481	1,103	–
Leicestershire - -	308	4,738	5,046	3	–	149	–	–	1,290	1,442	–	–	2	–	–	43	45	1,487	6,533	1,499,730	42,011	—	—	–
Nottinghamshire -	1,534	17,235	18,769	–	–	333	–	–	4,169	4,502	–	–	15	–	–	257	272	4,774	23,543	6,821,830	3,857	—	304	–
Warwickshire - -	276	5,035	5,311	–	–	173	–	–	1,520	1,693	–	–	1	–	–	56	57	1,750	7,061	1,950,519	44,434	755	4,605	–
TOTAL - -	5,026	58,063	63,089	6	–	1,441	–	–	14,411	15,858	–	–	58	–	–	1,149	1,207	17,065	80,154	21,744,658	130,752	9,236	6,012	–

APPENDIX II.

LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom, within one year and a day from the date of the Accident, in the MIDLAND DISTRICT during the Year 1894.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	Total.
1	1893. Dec. 15 3.0 p.m.	8th	Newhall Park -	Burton-on-Trent (Derbyshire).	Earl of Carnarvon -	John Lovatt -	24	Loader -	Fall of roof. Deceased was removing coal from near a fault side when the roof broke down, fatally injuring him. He died 7th October 1894.	–	1	–	–	–	1
2	1894. Jan. 3 3.0 a.m.	5th	Pilsley No. 3 (Tupton Coal).	Chesterfield (Derbyshire).	Pilsley Colliery Co. -	John W. Smith -	48	Dataler -	Fall of roof. Deceased was engaged in taking timber out of a roadway when a bar suddenly broke, and liberated a quantity of stone, which fell on deceased.	–	1	–	–	–	1
3	Jan. 9 1.0 p.m.	6th	Reservoir (Main Coal).	Ashby - de - la - Zouch (Leicestershire).	Moira Colliery Co. -	William Cooper -	26	Stallman -	Fall of roof. Deceased was examining some bad roof shortly after a shot had been fired, when it fell upon him.	–	1	–	–	–	1
4	Jan. 16 1.45 p.m.	8th	Albert - -	Chesterfield (Derbyshire).	Derbyshire Silkstone Colliery Co.	Thomas Marshall -	16	Horse driver	He was guiding a self-acting incline rope on to the drum, when the hook he was using for the purpose appears to have got fast in the rope and dragged him into the drum.	–	–	–	1	–	1
5	Jan. 23 2.30 a.m.	5th	Rawdon -	Ashby - de - la - Zouch (Leicestershire).	Moira Colliery Co. -	William Wileman	61	Stallman -	Fall of roof. Withdrawing back timber when a sudden weight came on, and caused other timber to give way with a large fall of roof.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	Total.
6	1894. Jan. 27 8.0 a.m.	2nd	Langwith -	Langwith (Derbyshire).	Sheepbridge Coal and Iron Co.	James Russell -	37	Stallman -	Fall of roof. Deceased was cutting the coal to liberate it, when he cut through to a fault slip, and a piece of roof fell and struck him.	–	1	–	–	–	1
7	Feb. 1 9.30 a.m.	3rd	Clifton (Hard Coal).	Nottingham (Notts.).	Clifton Colliery Co. -	Henry Smith -	35	Deputy -	Fall of roof. He was with two other men setting timber when the roof fell. He died on the 7th. The other two men were injured.	–	1	–	–	–	1
8	Feb. 1 12.0noon	5th	Griff - -	Nuneaton (Warwickshire).	Griff Colliery Co. -	Frederick Sharp -	21	Shunter -	Deceased was attending to the shunting of empty waggons when he was run over. "Fly-shunting" was being done contrary to the rules of the colliery. He died the same day.	–	–	–	–	1	1
9	Feb. 5 9.0 a.m.	3rd	Langwith -	Langwith (Derbyshire).	Sheepbridge Coal and Iron Co.	John Thomas Musson.	20	Dataler -	Fall of roof. He was assisting the stallman to withdraw timber, when a large quantity of roof fell. He died on the 15th inst.	–	1	–	–	–	1
10	Feb. 12 2.30 p.m.	8th	Clay Cross No. 6	Chesterfield (Derbyshire).	Clay Cross Colliery Co.	Joseph Leah -	13	Horse-driver	Run over by a runaway empty tub which broke away from a descending train of empty tubs, whilst being lowered down an engine-plane. Had an "over chain" been in use, it would probably have prevented the accident.	–	–	–	1	–	1

List of Fatal Accidents—*continued*.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	Total.
11	1894. Feb. 13 12 midt.	3rd	Blackwell B. Winning.	Alfreton (Derbyshire).	Blackwell Colliery Co.	Thomas Bradshaw	53	Stone contractor.	Fall of side. A piece of rock fell off the side of a roadway where deceased was working. He died on 12th September.	–	1	–	–	–	1
12	Feb. 14 8.30a.m.	2nd	Birley (West Pit).	Sheffield (Derbyshire).	Sheffield Coal Co. -	William Hallam -	50	Stallman -	Fall of roof. He was getting coal off the face when a fall of roof occurred, running the timber out and killing deceased.	–	1	–	–	–	1
13	Mar. 7 4.0 p.m.	2nd	Birley (Moorhole Pit).	Sheffield (Derbyshire).	Sheffield Coal Co. -	John Haynes -	47	Do. -	Fall of roof whilst engaged building a timber pack to support the roof. Died 10th March.	–	1	–	–	–	1
14	Mar. 14 1.30p.m.	8th	Grassmoor No. 2	Chesterfield (Derbyshire).	Grassmoor Colliery Co.	David Twyby -	37	Do. -	Fall of roof. Deceased stood watching men get down top coal, when a portion of roof fell upon him, coming away from a fault slip which was clearly visible for many yards along the stall, and which ought to have been secured by timbering.	–	1	–	–	–	1
15	Apr. 7 2.0 a.m.	7th	Hollingwood -	Staveley (Derbyshire).	Staveley Coal and Iron Co.	John William Shaw	22	Loader -	Fall of coal. The top coal suddenly burst off, knocking a prop out, which struck deceased in the abdomen. He died on the 8th inst.	–	1	–	–	–	1
16	Apr. 9 10.0a.m.	4th	Bailey Brook -	Heanor (Derbyshire).	Butterley Co. -	William Whitney -	33	Stallman -	Fall of roof. He was repairing the gateway when a quantity of roof fell upon him.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	Total.
17	1894. Apr. 9 10.30 a.m.	4th	Whitwick No. 5	Coalville (Leicestershire).	Whitwick Colliery Co.	Thomas Partridge	15	Pump attendant.	He was engaged to pump water with a small hand-pump near where the hauling wheels are at work. He was found crushed in the hauling wheels, and must have climbed over the fence which properly protected the machinery.	–	–	–	1	–	1
18	Apr. 9 2.0 p.m.	7th	Star - -	Chesterfield (Derbyshire).	Mrs. Ann Maria Waterhouse.	William Jepson -	16	Trammer -	Fall of roof. Whilst tramming along the roadway, the tub appears to have caught against a prop and knocked it out, causing the roof to fall upon deceased.	–	1	–	–	–	1
19	Apr. 12 1.30 a.m.	5th	Silver Hill (Low Main Coal).	Mansfield (Notts.)	Stanton Iron Co. -	Robey Marriott -	18	Horse-driver.	Whilst conveying eight full tubs of coal along a roadway, he appears to have fallen down, and the horse and tubs passed over him.	–	–	–	1	–	1
20	May 2 9.0 p.m.	5th	Dale No. 2 -	West Hallam (Derbyshire).	Stanton Iron Co. -	Thomas Glenn -	49	Stallman -	Fall of coal. He was loading coal in front of overhanging coal; part of a web had fallen when the sprags had been taken out.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	Total.
21	1894. May 9 11.0 a.m.	4th	Alvecote -	Tamworth (Warwickshire)	Tamworth Colliery Co.	Thomas Knight -	16	Horse-driver	Deceased was taking a train of five full tubs down an inclined roadway, when another full tub was allowed to run out of the pass-bye and fatally injured deceased, who was walking behind the train. At the inquest a verdict of "Manslaughter" was returned against the boy who left the stop-blocks open at the top of the inclined roadway.	–	–	–	1	–	1
22	May 21 3.0 p.m.	8th	Selston - -	Eastwood (Notts).	Barber Walker & Co.	Arthur Shooter -	29	Dayman -	Deceased was getting down overhanging coal when it fell upon him.	–	1	–	–	–	1
23	May 24 2.0 p.m.	8th	Pleasley -	Pleasley (Derbyshire).	Stanton Iron Co. -	Horace Wilson -	13	Electric motor attendant.	Deceased was found in the wheels of a hauling-engine worked by an electric motor. He appears to have got through the fence for some purpose unexplained.	–	–	–	1	–	1
24	May 28 1.0 p.m.	7th	Hollingwood -	Staveley (Derbyshire).	Staveley Coal and Iron Co.	Thomas Gibbons	18	Loader -	Fall of roof. Deceased was assisting the stallman to draw timber from an airway when another prop was pushed out, and a quantity of roof fell upon him.	–	1	–	–	–	1
25	May 31 8.0a.m.	2nd	Bolsover -	Chesterfield (Derbyshire).	Bolsover Colliery Co. -	Elijah Hall -	46	Dataler -	Fall of roof. Deceased was fixing timber to support the roof when a large piece of stone fell upon him. He died on June 7th.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	Total.
26	1894. June 2 7.30 a.m.	1st	Clay Cross No. 4	Clay Cross (Derbyshire).	Clay Cross Colliery Co.	Joseph Brown	30	Stallman	Fall of roof. Deceased was holing in a heading when some roof fell. He died 1st December.	–	1	–	–	–	1
27	June 8 6.30 a.m.	14th	Alma	Clay Cross (Derbyshire).	G. H. Turner	Frank Handford	20	Pumping-engine attendant.	Deceased was leaving his work, and attempted to get on the cage, which stood at an intermediate landing in the shaft, after he had given a signal for the cage to move on. The cage moved and deceased fell down the shaft.	–	–	1	–	–	1
28	June 12 3.30 p.m.	2nd	Renishaw Park No. 3.	Eckington (Derbyshire).	J. & G. Wells (Lim.)	George Henry Hazlehurst.	16	Horse-driver.	Fall of coal. Deceased was assisting to take an empty tub to load some roof coal that his father was getting down, when he approached too near, and was struck by the falling coal.	–	1	–	–	–	1
29	July 9 10.0 a.m.	3rd	Skegby	Mansfield (Notts.).	Skegby Colliery Co.	Thomas Taylor	38	Stallman	Fall of coal. Whilst pulling coal off the face with a bar, a quantity fell on to him. He probably slipped in trying to get out of the way of the falling coal.	–	1	–	–	–	1
30	July 11 12.0 noon	5th	Clay Cross No. 2	Chesterfield (Derbyshire).	Clay Cross Colliery Co.	James Marshall	14	Horse-driver	Deceased was taking nine full tubs down a road and was himself riding on the limmers. The first tub got off the road and threw deceased off the limmers. He appears to have died from "shock."	–	–	–	1	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost.					
										Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	Total.
	1894.														
31	July 12 12.20p.m.	3rd	Bentinck -	Kirkly-in-Ashfield (Notts.).	New Hucknall Colliery Co.	James Swanwick -	16	Platelayer -	Four full waggons of bricks were being lowered down the sidings; deceased attempted to put a sprag in one wheel and appears to have fallen under the waggon.	–	–	–	–	1	1
32	Aug. 2 3.30 p.m.	10th	Alfreton -	Alfreton (Derbyshire).	Blackwell Colliery Co.	Thomas Meakin -	30	Labourer -	Deceased was assisting to repair a screen tippler, and whilst at work, the machinery moving an endless belt was started, and drew the deceased under the tippler, crushing him. He died the same day.	–	–	–	–	1	1
33	Aug. 20 10.0 a.m.	3rd	Bestwood -	Nottingham (Notts.).	Bestwood Colliery Co.	Alfred Robinson -	29	Dayman -	Fall of coal. Deceased appears to have been holing the coal after trying to pull it down, and neglected to re-set the sprags. The coal fell off and crushed him.	–	1	–	–	–	1
34	Aug. 20 2.30 p.m.	6th	Watnall -	Eastwood (Notts.).	Barber, Walker & Co.	Henry Clarke -	29	Loader -	Whilst pushing a full tub of coal along the face, a piece of top clod rolled off the coal, and fastened deceased against the tub. He died the next day.	–	1	–	–	–	1
35	Aug. 21 9.0 a.m.	2nd	Clay Cross No. 9	Chesterfield (Derbyshire).	Clay Cross Colliery Co.	George Lenthall -	39	Stallman -	Fall of roof. Deceased was conveying an empty tub into the working face, when a piece of roof from a fault fell upon him.	–	1	–	–	–	1

List of Fatal Accidents—continued.

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost.					
										Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	Total.
36	1894. Sept. 4 10.10a.m.	4th	Tibshelf -	Alfreton (Derbyshire).	Babbington Coal Co. -	Charles Birkin Key	16	Assistant banksman.	Deceased slipped and fell into a balanced drop-cage at the moment he had released the break lever for it to descend, and was killed by the top cross-bar crushing him against the platform.	–	–	–	–	1	1
37	Sept. 6 12.0 noon	6th	Pye Hill -	Pye Hill (Notts.)	J. Oakes & Co. -	William Rodgers -	32	Stallman -	Fall of roof. Deceased knocked a prop out with a hammer instead of using a ringer and chain as required by the Special Rules.	–	1	–	–	–	1
38	Sept. 10 1.0 p.m.	7th	Glapwell -	Chesterfield (Derbyshire).	Sheepbridge Coal and Iron Co.	Thomas Ball -	30	Do. -	Fall of coal. Deceased was holing when the coal burst over the sprags and fell upon him. He died the same day.	–	1	–	–	–	1
39	Sept. 21 10.20a.m	4th	Newstead -	Nottingham (Notts.).	Newstead Colliery Co.	Thomas Corbett -	43	Dayman -	Fall of roof. Deceased had pulled some coal off the face, liberating a large quantity of roof, which fell upon him.	–	1	–	–	–	1
40	Sept. 26 12.20p.m.	6th	Silverhill -	Mansfield (Notts.).	Stanton Iron Co. -	Sydney Thomas Maddox.	16	Lamp-lighter	Deceased was trying to stop a runaway horse near the pit bottom and was knocked down. He died next day.	–	–	–	1	–	1
41	Sept. 29 7.45 a.m.	2nd	Alfreton -	Alfreton (Derbyshire).	Blackwell Colliery Co.	Aaron Severn -	45	Stallman -	Fall of roof. Deceased stood back in the goaf to allow a loaded tub to pass when the roof fell upon him. Died next day.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	Total.
42	1894. Oct. 8 2.30 p.m.	8th	Cinderhill -	Nottingham (Notts.).	Babbington Coal Co. -	Frederick Clarke -	27	Dayman -	Fall of roof. Deceased was filling a tub with coal which he had pulled off the face, when the roof fell and killed him.	–	1	–	–	–	1
43	Oct. 23 11.30a.m.	5th	Pleasley -	Pleasley (Derbyshire).	Stanton Iron Co. -	George Dixon -	15	Horse-driver	Whilst walking by the side of his horse, the horse stumbled, knocking deceased down, and seven full tubs passed over him.	–	–	–	1	–	1
44	Oct. 24 7.0 a.m.	1st	Shire Oaks -	Worksop (Notts.)	Shire Oaks Colliery Co.	William Kennewell	17	Corporal -	A full tub broke loose from the endless rope and ran back down the road. It struck the deceased and fatally injured him.	–	–	–	1	–	1
45	Nov. 15 10.30a.m.	5th	Shirland -	Alfreton (Derbyshire).	Blackwell Colliery Co.	William Fresby -	46	Blacksmith	Deceased was riding in the upcast shaft for the purpose of attending to some repairs, and was carrying a long iron bar. This iron bar got wedged into the brickwork of the shaft side as the cage was slowly ascending, and whilst trying to liberate it deceased fell out of the cage and down the shaft, a distance of 60 yards.	–	–	1	–	–	1
46	Nov. 17 11.0 a.m.	4th	Clay Cross No.2 (Tupton).	Clay Cross (Derbyshire).	Clay Cross Colliery Co.	Tom Green -	40	Stallman -	Fall of coal. Deceased was holing the coal, when it rolled over the sprags, killing him.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost.					
										Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	Total.
47	1894. Nov. 23 7.30 a.m.	1st	Old Birchwood	Alfreton (Derbyshire).	Butterley Co. -	Thomas Smith -	60	Holer -	Fall of coal. Deceased was holing the coal on a fault side, when the holing sprags gave way, and the coal fell upon deceased.	–	1	–	–	–	1
48	Dec. 3 2.0 p.m.	8th	Tibshelf (Low Main).	Alfreton (Derbyshire).	Babbington Coal Co. -	George Herons -	38	Banksman -	Crushed between the side of a railway waggon and a beam belonging to the screens. The waggon being set in motion by other waggons which ran into it owing to deceased's neglect to put in the stop-blocks after taking an empty waggon through them.	–	–	–	–	1	1
49	Dec. 10 7.30 a.m.	2nd	Plumptre (Deep Soft).	Eastwood (Notts.).	Butterley Co. - -	Samuel Hallam -	44	Holer -	Fall of coal. A quantity of coal fell upon deceased whilst he was holing. He died on 13th instant.	–	1	–	–	–	1
50	Dec. 19 9.0 a.m.	2nd	Donisthorpe -	Ashby - de - la - Zouch (Leicestershire).	Checkland, Son, and Williams.	Joseph Scott -	48	Banksman -	Deceased was crushed between two full trams of coal whilst at work on the pit bank. He died on 22nd instant.	–	–	–	–	1	1
51	Dec. 20 9.0 p.m.	3rd	Bedworth -	Bedworth (Warwickshire).	Bedworth Coal and Iron Co.	John Goldby -	24	Holer -	Fall of coal. Deceased had holed the coal, and took the sprags out to do the slotting. After this was done, he again went under the coal without having previously re-set his sprags as required by the colliery rules.	–	1	–	–	–	1

List of Fatal Accidents—*continued.*

No. of Accidents.	Date and Hour of the Accident.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Aboveground.	TOTAL.
52	1893 Dec. 24 7.30 p.m.	11th	St. John's -	Staveley (Derbyshire).	St. John's Colliery Co.	Samuel Rose -	60	Engine-wright.	Fall of roof. Deceased with other men were fixing a beam for machinery when a large fall of roof occurred, probably due to the timber not being firmly fixed. Three other men were injured at the same time and place.	–	1	–	–	–	1
									Total - -	–	34	2	10	6	52
									Deaths in collieries - -					-	52
									Number of separate accidents -					-	52

SUMMARY, 1894.

—	1893.	1894. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL.
Accidents - -	1	5	6	2	5	6	3	3	4	6	3	3	5	52
Deaths - -	1	5	6	2	5	6	3	3	4	6	3	3	5	52

APPENDIX III.

The following DEATHS occurring in or about the MINES of the MIDLAND DISTRICT have been reported during the year 1894.

No. of Accidents.	Date of Death.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.
	1894. Jan. 5	Swadlincote - -	Swadlincote (Derbyshire).	Hall and Boardman -	Richard King -	55	Stallman -	Fell down in a fit and died in the mine. Jury returned a verdict of "Died from natural causes."
	" 11	Birchwood - -	Alfreton (Derbyshire).	Babbington Coal Co. - -	George Fox - -	—	Banksman -	Died of heart disease whilst going to his work. No inquest was held.
	Mar. 14	Tibshelf No. 5 -	Alfreton (Derbyshire).	Babbington Coal Co. -	Thomas Jobson -	29	Header -	Died of heart disease whilst going to his work in the mine.
	" 30	Stanton (Woodfield)-	Burton-on-Trent (Derbyshire).	J. and N. Nadin & Co. -	William Staley -	60	Stallman -	Died in the mine. Jury returned a verdict that the death was due to natural causes.
	June 2	Exhall - -	Coventry (Warwickshire).	Edward Wilson - -	William Randle -	66	Stallman -	He died in the mine from natural causes. No injury had been received by deceased.
	July 1	Snibston - -	Coalville (Leicestershire).	South Leicestershire Colliery Co.	Frederick Jones -	45	—	Doctor gave a certificate for burial, but it being reported that the man had received an accident, an inquest was held. The jury confirmed the doctor's certificate. Death due to "abscess of the hand, embolism, syncope," probably might be due to an accident.
	Aug. 29	Hucknall Torkard	Nottingham (Notts.).	Hucknall Colliery Co. -	James Robinson -	49	Dayman -	He died in the mine from natural causes, having received no injury. No inquest was held.

List of Fatal Accidents—*continued.*

No. of Accidents.	Date of Death.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.
	1894. Oct. 13	Cossall - -	Cossall (Notts.) -	Cossall Colliery Co. -	Henry Lawson -	10	—	The Midland Railway Company's locomotive was shunting empty waggons into the colliery siding, and ran over the deceased. He was not employed at the colliery, and the accident happened on the footpath crossing the railway.
	Nov. 5	Boythorpe - -	Chesterfield (Derbyshire).	Boythorpe Colliery Co. -	John George Redfern	46	Pumping-engine man.	Whilst lying down resting in the pumping engine-house he suddenly died from heart disease.
	„ 26	Markham No. 1 -	Chesterfield (Derbyshire).	Staveley Coal and Iron Co. -	Aaron Arthur Fox -	16	Horse-driver	Died from exhaustion, consequent upon blood poisoning, from acute inflammation of the left thigh bone. It was stated, but not proved, that deceased met with an accident on 23rd October.
	Dec. 12	Denby - - -	Denby (Derbyshire)-	W. Drury-Lowe - -	Frederick Weston -	46	Stallman -	He died suddenly in the mine from natural causes. No inquest was held.
	„ 12	Stanton - -	Swadlincote (Derbyshire).	J. and N. Nadin & Co. -	Henry Whetton -	55	Banksman -	He died suddenly from "syncope" whilst at work.

REPORT on the working of the METALLIFEROUS MINES ACTS OF PARLIAMENT of 1872 and 1875, during the Year ending the 31st December 1894; by ARTHUR H. STOKES, Esq., F.G.S.

SIR, Green Hill, Derby, February 1895.

I HAVE the honour to submit the following report upon the working of the Metalliferous Mines Acts during the year 1894 in the district under my charge.

There has been only one fatal accident in the metalliferous mines of the Midland District during the year, but unfortunately it was accompanied by the death of two persons.

A number of non-fatal accidents have occurred, many of them of only a slight character.

The quantity of minerals raised during the year was 90,349 tons, a decrease of 299 tons as compared with the quantity raised in the previous year. The metalliferous mining in the district has been decreasing for some years, owing to the low price of the mineral produced, but although many mines remain unworked, they are kept in possession under the mining laws, by occasional visits, and should the price of the mineral worked be advanced to a remunerative standard, many of the small mines would resume work.

Fatal Accidents.

The one fatal accident of the year occurred at the Long Rake Mine, near Bakewell. The deceased men were engaged in getting calc-spar from the sides of an old lead vein, and which came to the surface at an almost vertical inclination. In working the vein for lead ore, the "old men" had left holes or shafts for the purpose of ingress and egress to and from the mine, such shafts being walled up with stone on two sides, and the width of the vein being only a few feet, the solid wall formed the other sides of the shaft; the débris being filled in the vein to support the walling. The deceased men had worked the spar nearly up to one of the old shafts, and having to remove a quantity of rubbish in order to reach the spar, they proceeded to break into the walling of the old shaft side for the purpose of making a hole so that the rubbish could be cast into the old shaft. To do this work they appear to have been standing on the walling at the top of the shaft, and after breaking a hole in the side, the ground collapsed beneath them, and they were precipitated into the mine below, along with a large mass of rubbish surrounding the top of the shaft. One man fell a distance of about 20 yards, and although alive when rescued, he died before being brought to the surface. The other man fell about 60 yards, and his body was not recovered until two days after.

Non-fatal Accidents.

The only non-fatal accident calling for special remark occurred at the Mill Close Mine, Matlock. The blasting in the mine is done by "gelignite," and when the holes are wet or meet with fissures in the limestone, the shot-hole is filled with clay, and afterwards an iron rod or "bull" is driven into the clay to form a hole for the cartridge of gelignite. It was whilst a man was driving the iron rod into the clay that an explosion occurred, and the rod and clay were driven out with great force. The cause for this explosion could not be clearly ascertained. The hole was wet, and other shots had been fired near the one that exploded. It is possible that some of the charge of a neighbouring hole had been washed into the new hole, or, possibly, some part of a cartridge had accidentally fallen amongst the clay before being put into the hole. The person injured could give no explanation as to the cause of the explosion, and a subsequent investigation failed to discover the true cause of the accident.

Quantity of Mineral.

The quantities of all sorts of minerals raised from mines under the Metalliferous Mines Acts during the year is given in detail in Table No. 10; but such quantities do not represent, in some cases, the total quantity of the minerals wrought in the district during the year, as there is an additional quantity worked by quarrying or open work.

Mineral Statistics.

The minerals from quarries which at any part is more than 20 feet deep will next year be obtained by statutory return, and this will not only facilitate the work of collecting such statistical information, but it will tend to insure a correct and early record being sent in.

I have, &c.,

ARTHUR H. STOKES,
H.M. Inspector of Mines.

The Right Hon. H. H. Asquith, M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall, London.

TABLE No. 10.

SUMMARY of MINING PRODUCE in the MIDLAND DISTRICT in the year 1894.—
(METALLIFEROUS MINES.)

Situation of Mines.	Kind of Mining Produce.	Tons.	Cwt.	Qrs.	Tons.	Cwt.	Qrs.
Bedfordshire	Fullers Earth	4,221	—	—	4,221	—	—
Buckinghamshire	Fire-clay	300	—	—	300	—	—
Derbyshire	Gypsum	9,564	—	—			
	Lead	5,188	—	—			
	Chert	3,326	—	—			
	Calc-spar	3,305	—	—			
	Sand	1,200	—	—			
	Limestone	427	—	—			
	Barytes	454	—	—			
	Fire-clay	400	—	—			
	Ochre	381	—	—			
	Umber	236	—	—			
	Calamine, Zinc	206	—	—			
	Manganese	36	—	—			
	Fluor-spar	30	—	—			
	Black marble	20	—	—	24,773	—	—
Leicestershire	Limestone	11,885	—	—	11,885	—	—
Nottinghamshire	Gypsum	46,213	—	—	46,213	—	—
Northamptonshire	Building stone	2,957	—	—	2,957	—	—
	Total Mineral				90,349	—	—

APPENDIX IV.

FATAL ACCIDENTS, and LOSS of LIFE arising therefrom, in the METALLIFEROUS MINES in the MIDLAND DISTRICT during the Year ending 31st December 1894.

Date.	Hour of the Shift when the Accident occurred.	Name of the Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Reputed Age.	Occupation.	Cause of Death, and Remarks.	No. of Lives lost. Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous. Underground.	Aboveground.	Total.
1894. June 29th	7th	Long Rake	Youlgreave (Derbyshire).	Long Rake Mining Company.	Joseph Buxton	48	Miner	Deceased were engaged in taking the cover off an old lead mining shaft, when the side suddenly gave way. The body of Charles Wright was not recovered until the 1st July.	–	–	1	–	–	1
					Charles Wright	59	Do.		–	–	1	–	–	1
								Deaths in Metalliferous Mines	–	–	–	–	–	2
								Number of separate Fatal Accidents	–	–	–	–	–	1

APPENDIX V.

No. 1.—SUMMARY of PERSONS EMPLOYED in and about the METALLIFEROUS MINES in the MIDLAND DISTRICT during the Year 1894.

Situation of Mines.	Underground. Male Persons—Ages. 12 to 13.	13 to 16.	Above 16.	TOTAL.	Aboveground—Ages. 10 to 13. Males.	10 to 13. Females.	13 to 18. Males.	13 to 18. Females.	Above 18. Males.	Above 18. Females.	TOTAL.	TOTAL Underground and Aboveground.
Bedfordshire, Buckinghamshire, Derbyshire, Leicestershire, Nottinghamshire, and Northamptonshire	–	9	462	471	–	–	43	–	284	2	329	800

ARTHUR H. STOKES,
H.M. Inspector of Mines.

Reports of Assistant Inspectors.

15, Corporation Oaks, Nottingham,
19th February 1895.

Sir,

I have the honour to state that during the past year I have exercised the duties of Inspector of Mines in the Midland District; and, in pursuance of section 20 of the Metalliferous Mines Act, 1872, I beg to report that I have acted under the directions of Mr. Stokes, the Chief Inspector in charge of the district.

I have, &c.

(Signed) W. HUTTON HEPPLEWHITE.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

23, Hartington Street, Derby,
20th February 1895.

Sir,

I have the honour to report that during the year 1894 I have exercised the duties of an Inspector of Mines in the Midland District; and that in so doing I have acted under the direction of Mr. Stokes, the Chief Inspector in charge of the district.

I have, &c.

(Signed) H. RICHARDSON HEWITT.

The Right Hon. H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall.

MINES.

REPORTS

OF

JOSEPH S. MARTIN, Esq., H.M. INSPECTOR OF MINES

FOR THE

SOUTH-WESTERN DISTRICT (No. 12),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887, the
Metalliferous Mines Regulation Acts, 1872 and 1875,
and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

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1895.

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Mr. Martin's Report.

REPORT of the INSPECTION of MINES under the COAL MINES REGULATION ACT, 1887, and the Act of 1894 to amend the provisions thereof with respect to Checkweighers, in the SOUTH-WESTERN (No. 12) DISTRICT, comprising the counties of CORNWALL, DEVON, DORSET, GLOUCESTER, HANTS, ISLE OF WIGHT, HEREFORD, MONMOUTH, SOMERSET, WILTS, and parts of BRECON and GLAMORGAN, for the Year 1894.—By JOSEPH S. MARTIN, Esq.

SIR, Durdham Park, Bristol, 15th February 1895.

In accordance with Section 43 of the Coal Mines Regulation Act, 1887, I have the honour as Inspector of Mines in charge of the South-Western District to submit the following report for the year ending 31st December 1894.

During the year I have again had the advantage of Mr. Bain's long and intimate experience of the district, as well as the assistance of Mr. E. E. V. Stokes.

A few, but not serious, complaints were received and duly attended to during the year. I found that, with one or two exceptions, they were reasonably founded, and not the result of spite or ill-will, which speaks creditably for the miners of the district.

I have great pleasure in congratulating the Owners, Agents, Managers, Under-officials, and Workmen upon the result of their exertions towards the reduction of accidents. The number of fatal accidents and deaths in the mines of the district are the lowest upon record, although they now include accidents on branch railways, at coke ovens, and washing machines, which was not the case before 1893, whereas the number of persons employed and the quantity of minerals raised exceeds any previous year. I hope these exertions will be continued without relaxation, and that still better results may follow.

I attribute this satisfactory state of things to a combination of circumstances, a greater appreciation of the requirements of the Act and Special Rules by the workmen generally, to the constant vigilance of officials preventing neglect by those who from thoughtlessness, laziness, or recklessness are inclined to omit taking proper precautions for their own safety as well as the safety of others; and to steps being taken from time to time, when desirable, for the purpose of enforcing the requirements of the Act and Special Rules. Much of it is also due to the support afforded to the authorities by the Justices in this district when proper cases come before them. I am glad to find that the Justices consider precautions "necessary" for the purpose of avoiding accidents, and not that accidents must first occur to prove the necessity, as, for example, that sprags are necessary against or under coal which is overhanging or "holed," with the object of providing against unseen "back," "face," or "blind" slips, which so frequently cause fatal and other accidents. In this course they seem to act differently from the Stipendiary in a case recently before him at Merthyr, where practically he decided (according to the newspaper reports) that the colliers, and not the officials, were the judges, and that because the coal had not fallen for two days, the action of the collier in not setting sprags was justifiable.

The decision appears to me to be absolutely wrong, judged from mining experience; it certainly is not in accordance with the spirit or intention of the Coal Mines Regulation Act, 1887, and, so far as the accounts I saw in the newspapers, did not appear to be in accordance with the views of the higher court, which had referred the case back to be re-heard.

I cannot understand the associations supporting miners in the contention that overhanging or "holed" coal does not require to be spragged in all cases, which they also appear to have done in this case, as well as in one at Tredegar Police Court, in my district.

This decision, being subversive of all authority and discipline in mines, will do much harm especially in the district in which it was promulgated, and which it will be seen by the

diagrams facing page 14 is already in regard to deaths from falls in a very unsatisfactory condition. I am thankful that, so far as I am aware, the Justices, Managers, Officials, Workmen and their Representatives in this district see with me that steps incurring so little trouble for the prevention of accidents, and attended with such good results, are necessary, and the reward is shown by the reduced number of accidents and deaths in this district, as shown by the diagrams referred to.

Some years ago there was an agitation started at meetings of the workmen, and also of their representatives in this district, on the question of spragging, and the Inspectors were censured for too rigid enforcement of the 22nd General Rule. The movement has died down long since, and I feel satisfied that no responsible leader of the men, with the diagrams facing page 14 before them, would think of desiring relaxation in the matter, and reversion to the old state of things.

Having seen in the "South Wales Daily News" of the 5th of June the report of a meeting of miners held at Pontlottyn, in my district, but close to where it joins up with Mr. Robson's, in which it was stated there existed "urgent necessity" for the appointment of working men as inspectors, to examine places in mines where danger existed, I addressed the following letters to the checkweigher at New Tredegar Colliery, who was one of the speakers, and also to the chairman of the meeting, viz. :—

The Vikings, Durdham Park, Bristol,
June 6th, 1894.

SIR,

As I do not know Mr. S—— E——'s address beyond New Tredegar, and I do not know if that is sufficient to find him, I enclose a letter which I have addressed to him, and shall feel obliged if you will be good enough to deliver it at your early convenience.

As you were a speaker on the same subject I am leaving the letter open, so that you may peruse it and know my practice with reference to the working of my inspection district.

My wish is that every man employed underground should act more or less as an inspector on behalf of himself and his comrades, and if causes exist for anticipating danger, that if the management does not remedy them I should at once be communicated with in regard to mines in my district.

Such communications are held by me to be *strictly confidential*, and the names would not be divulged.

If anything is known now to exist in any of the mines which is a source of danger requiring to be remedied I hope you will let me hear from you *by return of post*.

I am,
Sir,
Your obedient Servant,
JOSEPH S. MARTIN.

Mr. F—— E——,
Checkweigher, New Tredegar.

Durdham Park, Bristol, June 6th, 1894.

SIR,

I notice in yesterday's "South Wales Daily News" that at a meeting of miners which you presided over at Pontlottyn on the 4th instant, a Mr. F—— is reported to have stated that "the present Inspectors are inadequate for the efficient examination of the collieries, and that "there is urgent necessity for the appointment of practical men as Sub-inspectors."

If I correctly appreciate the application of the expression "urgent necessity," it refers to some dangers known to exist, and as it has been made use of in my district I shall be glad to be informed with reference thereto, in order that the dangers, if existing, may be removed without delay.

I wish it to be clearly understood that it has always been open to every miner to communicate with me, in perfect confidence, relative to matters of danger in any colliery in my district; upon receipt of such communications no unnecessary time has been lost in having such dangers removed if found to exist.

I made this clear to the 17 representatives of the miners whom I met in consultation more than half a dozen times in 1887, respecting the formation of Special Rules for this district, and I can only say that, so far as I am aware, it has been honestly acted upon by both parties. I then expressed myself to the effect, and it was the unanimous opinion of the representatives referred to that if anonymous complaints were received they should receive attention, but that as it could be relied upon with perfect confidence that names would not be divulged it was more desirable, in order to show bona fides, that the signature of the writer should be appended.

It was also their opinion that the complaints should rather be sent to me when men and owners were working on friendly terms than when disputes exist, making them appear to be more the result of spite than an honest desire for safety, but that if dangers did exist I should be communicated with in any case.

For my part, I have pleasure in acknowledging that as a rule this understanding has been fairly carried out, and found to act well. I, however, find a good deal of want of appreciation by the men of the necessity of setting sprags and, at times, props in the working places, as instanced by recent cases at Elliot Colliery and elsewhere, when offenders in this respect were powerfully supported in opposing this requirement of the Act and Special Rules, as well as the orders of the officials, on the subject.

If speakers at meetings of your organisation would constantly give prominence to the necessity of strict individual compliance, not only with the rules, but also all other possible means of averting accidents, by the men themselves, much good would result and accidents would be reduced.

It seems unreasonable that I should be constantly pressing owners and managers to carry out and *enforce* the requirements of the Act for the safety of the men, if the representatives of the men throw their influence against the management in doing so.

I consider that if the force of mining opinion generally was directed in support of (rather than, as would at times appear to be the case, in opposition to) the management in such matters it would be considerably more effective than even the frequent and always unpleasant enforcement of penalties under the Mines Act.

I now hope that if any grounds are known to Mr. F——, *or anyone else*, for the expression of urgent necessity of additional inspectors in any of the mines in my district with regard to existing danger, that I may *at once be informed* thereof, in order to have it removed.

I do not know what Mr. F——'s address may be, but I shall be glad if you will forward this letter to him for perusal and information.

I am,
Sir,
Your obedient Servant,
S. MARTIN,
H.M. Inspector of Mines.

Mr. S—— E——,
New Tredegar.

NOTE.—Mr. F——, in reply, pointed out that I was mistaken in attributing the statements to him, which were made by a Mr. J—— T——.

It will be seen from these letters, written less than three weeks before the Albion Colliery Explosion, that it is and must be well known to the miners and their representatives that the Inspectors are willing and pleased to receive and attend to complaints respecting danger from any source, and that such complaints or communications are invariably dealt with confidentially.

It is nothing unusual after disasters like the Albion to find some men come forward and express their anticipations of such results instead of communicating them beforehand with a view to prevention, if such ideas ever did actually occur to them.

Surveying and Planning.

For remarks under this heading *see* page 45, where I deal with the subject under the Metalliferous Mines Regulation Act, 1872.

Safety-lamps.

The returns made to me show (*see* table on page 7) that during the year there were 18,326 safety-lamps in use, being an increase of 2,619 as compared with 1893. Of these, 15,026 were fastened with the lead plug lock, while 3,300 were still provided with the old screw lock only. These figures, when compared with those of my report for the previous year, are satisfactory, and I expect to be able to report a continued diminution of this latter means of locking in future reports. The lamps in use were Bonnetted Clammy (2,775), Deflector (3,507), Cambrian (2,938), Mueselor (4,425), Protector (1,406), Marsant (2,953), Routledge (65), the Old Davy (240), and not described (19).

The satisfactory results obtained and recorded in preceding reports, with the increased use of safety-lamps, has this year been much more than maintained, the number of fatal accidents and deaths being the smallest ever recorded. Whereas in 1886 only 25 per cent. of the persons employed underground (in the South Wales Coalfield portion of the district) worked with safety-lamps, 63 per cent. did so in the year under review.

No fatal explosion of firedamp or coal dust occurred, and there were only four comparatively trivial non-fatal ones, by which five persons were injured more or less. The number of persons employed for each fatal accident or death from falls of roof and sides was also the highest hitherto recorded in (the South Wales coalfield portion of) the district, where they are now so largely using safety-lamps, showing that with safety-lamps a considerably increased amount of security is attained, even from falls of roof and sides, as I contended would be the case when the Arbitration which occurred in reference to the Cwmbran Colliery was being heard in 1891–92. Be the cause what it may, the satisfactory results are coincident with the increase of lamps, and the course pursued, of insisting upon safety-lamps being used, has been very fully vindicated.

Messrs. Hoskins and Llewellyn have tardily introduced safety-lamps into some of the seams in their mine, but they have not yet done so in their "Meadow Vein," the seam in which at the adjoining colliery (Llanarch) the disastrous explosion occurred in 1890. I can only repeat what I said in my last report, that they are, I consider, incurring serious responsibilities in consequence.

I have to acknowledge a different course of procedure in the case of the Powell's Tillery Steam Coal Co. Ltd., who, upon my recommending the introduction of safety-lamps at their Penybont Pit, forthwith accepted it, and replaced 500 naked lights with safety-lamps, without waiting for the experience of having a man burned. The Elled Seam is still worked there with naked lights, but they were quite prepared to at once introduce lamps into it also, if I pressed the matter. I attended at the Colliery Office and had the circumstances described to me in the presence of a deputation of miners, headed by the checkweigher, which attended to urge the continuance of the use of naked lights in this seam, danger from firedamp being comparatively small. Having heard all sides, I expressed my acquiescence *for the present* with the proposal, as I consider it desirable to let them have experience for a time with the lamps in the other seams, seeing that there are no immediate grounds for anticipating danger, and with the understanding that if occasion arose or I considered it desirable hereafter they are willing to adopt lamps in this seam also.

Hartley Surplus Relief Fund.

The Honorary Secretaries for the respective funds, viz.: Mr. G. C. Hewitt, of Coal Pit Heath Colliery, Mr. G. H. Rawlinson, of Cinderford, and Mr. Thomas Latch, of Newport, (Mon.), continue to bring the cases of fatal accidents forward for consideration, and remit the cheques as soon as passed by the respective Trustees.

Treatment of Animals.

I have pleasure in again being in a position to express myself in favourable terms on this subject. I believe the horses and animals employed underground in this district are now quite as well, if not a great deal better, cared for and treated as the same number in the same class of work on the surface, and for my part I shall do what I can towards maintaining or improving that state of efficiency.

Statistics.

The total number of persons employed during the year in and about the 264 mines at work was 44,889 (an increase of 1,226 as compared with the previous year). Of this total, 38,038 (or an increase of 959) were employed below ground, and 6,851 (or an increase of 267) were employed on the surface. The total quantity of mineral raised was 11,254,225 tons, an increase of 1,562,018 tons as compared with the previous year. Of this quantity 11,140,771 tons were coal (an increase of 1,551,620 tons), 86,311 tons were fireclay (an increase of 10,421 tons), 24,844 tons were ironstone (an increase of 6,053 tons), and 2,299 tons were other minerals (a decrease of 6,076 tons).

The number of fatal accidents was 48, resulting in 49 deaths. Of these, 40 accidents and 41 deaths occurred underground, while eight accidents and eight deaths occurred above ground.

The number of persons employed for each fatal accident was 935 (or 1·07 per thousand persons employed), and for each death 916 (or 1·08 per thousand persons employed). The number of tons of mineral raised for each fatal accident was 234,463, (or 4·27 accidents for each million tons of mineral raised), and for each death 229,678 tons (or 4·35 deaths for each million tons of mineral raised); it will be found, by referring to the table on page 8, that these figures compare most favourably with any previous year, which is satisfactory. By increased discipline and enforcement of the rules, I hope these figures may in the future be yet further improved.

TABLE showing for each Year since 1873 the NUMBER of SAFETY-LAMPS in use; the NUMBER of PERSONS EMPLOYED; the QUANTITY of MINERAL RAISED; the NUMBER of FATAL ACCIDENTS and DEATHS from EXPLOSIONS, from FALLS and from ALL CAUSES; with respective ratios of PERSONS EMPLOYED and MINERAL RAISED for each DEATH; and also the NUMBER of NON-FATAL ACCIDENTS, from FALLS and also from ALL CAUSES.

Year.	No. of Safety-lamps in use.	Number of Persons employed.	Quantity of Minerals raised.	Firedamp and Coal Dust Explosions.				Falls of Roof and Sides.				From all Causes.				Non-fatal Falls of Roof and Sides.				Non-fatal Accidents from all Causes.	
				Fatal Accidents.	Deaths.	No. of Persons employed for each Death.	No. of Tons of Minerals raised for each Death.	Fatal Accidents.	Deaths.	No. of Persons employed for each Death.	No. of Tons of Minerals raised for each Death.	Fatal Accidents.	Deaths.	No. of Persons employed for each Death.	No. of Tons of Minerals raised for each Death.	Accidents. Roof.	Accidents. Sides.	Accidents. Total.	No. of Persons injured.	Accidents.	No. of Persons injured.
1872 ACT.																					
1873	—	35,352	7,108,930	2	7	5,050	1,015,561	36	37	955	192,113	62	69	512	103,028	Not obtainable		106	108	215	229
1874	—	34,852	7,178,728	1	1	34,852	7,178,728	35	35	995	205,106	64	64	544	112,167	Ditto		125	128	276	297
1875	1,755	34,136	6,437,322	5	32	1,066	201,166	30	32	1,066	201,116	54	83	411	77,558	Ditto		134	143	292	310
1876	1,804	33,224	7,388,076	4	29	1,146	254,761	29	30	1,107	244,602	48	74	449	99,758	Ditto		200	208	348	367
1877	1,814	31,906	7,249,998	2	2	16,612	3,124,999	30	31	1,029	233,870	53	55	580	131,820	Ditto		205	212	346	367
1878	2,194	30,874	7,331,148	1	268*	115	27,355	44	45	686	162,914	65	333	93	22,015	135	73	208	209	352	366
1879	2,037	30,060	7,557,870	2	9	3,340	839,763	46	48	426	157,455	65	75	400	100,771	139	83	222	225	376	386
1880	2,949	29,811	7,997,879	2	126†	237	63,475	29	31	941	257,996	49	175	170	45,702	103	65	168	172	290	303
1881	2,971	31,044	8,575,899	None.	None.	31,044	8,575,899	39	41	757	209,168	63	68	457	126,116	105	52	157	162	290	301
1882	3,638	31,672	8,774,339	3	11	2,879	797,667	36	36	879	243,731	63	73	434	120,196	105	54	159	163	324	352
1883	3,541	33,759	9,463,742	4	9	3,751	1,051,527	31	31	1,080	305,282	63	83	496	139,172	127	63	190	193	328	355
1884	3,983	34,945	9,703,086	3	16	2,121	606,434	31	31	1,127	313,002	58	71	492	136,663	110	46	156	170	299	322
1885	5,047	35,659	9,478,018	2	3	11,886	3,159,339	37	37	963	256,162	69	70	509	135,400	108	54	162	165	306	337
1886	5,283	34,869	9,363,541	5	22	1,585	425,614	27	27	1,291	346,797	59	80	435	117,044	109	61	170	177	315	344
1887	5,937	35,991	9,765,517	1	1	35,991	9,765,517	33	34	1,058	287,221	53	54	666	180,843	77	53	130	130	259	268
For 15 years	—	498,154	123,374,093	37	536	929	230,176	513	526	947	234,551	889	1,427	349	86,457	—	—	—	—	—	—
1887 ACT.																					
1888	6,585	36,151	9,970,573	None.	None.	—	—	27	29	1,246	343,831	50	55	657	181,283	95	32	127	127	267	277
1889	7,455	38,154	9,972,983	2	5	7,631	1,994,596	33	35	1,090	284,942	59	65	587	153,431	68	31	99	108	215	236
1890	9,400	40,938	10,223,922	3	182‡	225	56,175	31	31	1,320	329,804	56	237	172	43,138	56	36	92	92	223	238
1891	11,868	43,568	10,350,987	4	14	3,110	739,350	26	26	1,676	398,115	53	63	691	164,301	57	23	80	80	187	196
1892	12,262	42,612	10,200,044	1	1	42,612	10,200,044	25	26	1,639	392,309	51	56	761	182,143	65	29	94	97	202	214
1893	15,707	‖43,663	¶9,692,207	1	2	21,832	4,846,104	27	29	1,505	334,214	53	58	752	167,107	65	31	196	98	175	179
1894	§18,326	44,889	11,254,225	None.	None.	—	—	25	26	1,726	432,854	48	49	916	229,678	69	39	108	111	244	252

* Abercarn explosion (268). † Risca explosion (120). ‡ Llanerch explosion (176).

§ Of these 18,326 Safety-lamps 15,026 are locked by means of a lead plug.

‖ In 1893 and 1894 the persons employed (848 and 818 respectively) on branch railways and in the washing and working of coal are included, as are also the fatal accidents and deaths connected therewith. This upsets the figures for comparison with past years

¶ The output this year was largely interfered with by a strike which extended over the greater part of the district for several weeks.

The annexed tabulated statement shows the number of persons employed, the number of tons of minerals raised, and the ratio per fatal accident, and per life lost for several years past:—

	*1877.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	‡1893.	1894.
Total number of persons employed.	31,906	35,659	34,869	35,991	36,151	38,154	40,938	43,568	42,612	43,663	44,889
Tons of mineral raised	7,249,998	9,478,018	9,363,541	9,765,517	9,970,573	9,972,983	10,223,922	10,350,987	10,200,044	9,692,207	11,254,225
Number of collieries	394	294	297	306	286	289	267	265	238	224	264
Number of fatal accidents	51	69	59	53	50	59	56	53	51	53	48
Number of lives lost	53	70	80	54	55	65	237	63	56	58	49
Number of persons employed per fatal accident.	625	516	591	679	723	647	731	842	835	824	935
Number of persons employed per life lost.	602	509	435	666	657	587	173	691	761	752	916
Number of tons of mineral raised per fatal accident.	142,157	137,362	158,704	184,255	199,411	169,033	182,570	195,301	200,000	182,871	234,463
Number of tons of mineral raised per life lost.	136,792	135,400	117,044	180,843	181,283	153,431	43,139	164,301	182,143	167,107	229,678
Number of tons of mineral raised per persons employed.	227	266	268	271	276	261	250	237	239	222†	250
Number of tons of mineral raised per persons employed underground.	270	310	318	318	321	305	290	277	278	261†	296

* This was the most favourable year prior to 1887. † A strike which occurred this year caused these low figures.

‡ In 1893 the persons employed and accidents occurring in connexion with private branch railways, Washing and Coking of Coal are included with those in and about the mines for the first time, and consequently the ratios naturally show worse results as the accidents are now included which was not previously the case.

Accidents.

The total number of accidents reported was 292, of which 48 were fatal. The fatal accidents resulted in the death of 49 persons and injuries to one other; the non-fatal accidents caused more or less serious injuries to 252 persons.

The fatalities are classified for each month as under:—

1893. Month.	Number of Fatal Accidents.	Lives lost Underground. Explosions of Firedamp and Coal Dust.	Falls of Roof.	Falls of Sides.	In Shafts.	Suffocation.	Miscellaneous.	Lives lost on Surface. Machinery.	Miscellaneous.	Boilers bursting.	Total Deaths.
November 1893	1	—	1	—	—	—	—	—	—	—	1
December ,,	1	—	1	—	—	—	—	—	—	—	1
January 1894	10	—	6	1	1	—	1	—	1	—	10
February ,,	6	—	4	—	—	—	2	—	1	—	7
March ,,	3	—	2	—	—	—	—	—	1	—	3
April ,,	3	—	1	1	—	—	—	—	1	—	3
May ,,	6	—	—	—	—	—	3	—	3	—	6
June ,,	2	—	2	—	—	—	—	—	—	—	2
July ,,	1	—	—	—	1	—	—	—	—	—	1
August ,,	4	—	—	—	—	—	3	—	1	—	4
September ,,	1	—	1	—	—	—	—	—	—	—	1
October ,,	4	—	2	—	—	—	2	—	—	—	4
November ,,	3	—	2	—	—	—	1	—	—	—	3
December ,,	3	—	2	—	—	—	1	—	—	—	3
Total	48	—	24	2	2	—	13	—	8	—	49

From the foregoing figures it appears that—

No life was lost by explosion of firedamp or coal dust.
24 lives were ,, falls of roof.
2 ,, ,, falls of sides, including coal at the face.
2 ,, ,, shaft accidents.
— ,, ,, suffocation.
13 ,, ,, miscellaneous accidents underground.
8 ,, ,, surface accidents.

List of the Fatal Accidents during the Year arranged according to Counties, and the respective Firms. (For details, see appended Schedule, page 26.)

No. of the Accident in Schedule.	Date of Accident.	Name of Mine.	Name of Owner or Company.	No. of Deaths	Cause of Accident.
			GLAMORGANSHIRE.		
4	January 6th -	Llanbradach -	The Cardiff Steam Coal Collieries Co., Limited.	1	Fell part way down shaft.
5	January 8th -	Rhymney (New Duffryn Pit).	The Rhymney Iron Co., Limited.	1	Fall of roof.
23	April 13th -	Darran -	Do. do. - (*See* also in Mon.)	1	Fall of roof.
			GLOUCESTERSHIRE.		
			BRISTOL.		
48	December 14 -	Parkfield -	The Kingswood and Parkfield Collieries Co., Limited.	1	Fall of roof.
3	January 4th -	Easton -	Leonard, Boult, and Co., Limited.	1	Fall of roof.
27	May 8th -	Do. - -	Do. do. -	1	Crushed against roof riding up engine plane on full tram.
30	May 28th -	California -	The Oldland Colliery Co., Limited.	1	Run over on railway sidings.
			FOREST OF DEAN.		
42	October 31st -	Speech House -	The Speech House Colliery Co., Limited.	1	Fall of roof.
			MONMOUTHSHIRE.		
35	August 20th -	Cwmsychan (No. 1 Pit).	The Abersychan Elled Steam and House Coal Co., Limited.	1	Run over by trams on engine plane.
46	December 4th	Abernant -	The Bargoed Coal Co., Limited.	1	Arm crushed between trams; died from shock.
21	March 29th -	Blaenavon (Big Pit).	The Blaenavon Co., Limited.	1	Fall of roof.
31	June 21st -	Blaenavon (Dodd's Slope).	Do. do. -	1	Fall of roof.
10	January 19th -	Waun Llwyd -	The Ebbw Vale Steel, Iron, and Coal Co., Limited.	1	Fall of roof.
12	January 25th	Ebbw Vale (No. 6 Pit).	Do. do. -	1	Fall of roof.
28	May 12th -	Waun Llwyd -	Do. do. -	1	Tripped over rope on engine plane; received slight injury, resulting in blood poisoning and death.
29	May 25th -	Ebbw Vale (No. 5 Pit).	Do. do. -	1	Jerked off full truck on railway sidings and run over.
32	June 28th -	Graig Fawr -	Do. do. -	1	Fall of roof.
38	September 10th	Victoria (No. 1 Pit).	Do. do. -	1	Fall of roof.
41	October 16th -	Ebbw Vale (No. 22 Pit).	Do. do. -	1	Crushed by trams against side of road.
13	February 2nd	Blaina (No. 2 Griffin Pit).	John Lancaster and Co., Limited.	1	Fall of roof.
34	August 11th -	Do. -	Do. do. -	1	Crushed by trams against side of road.
40	October 6th -	Blaina (No. 1 Griffin Pit).	Do. do.	1	Run over by trams on engine plane.

No. of the Accident in Schedule.	Date of Accident.	Name of Mine.	Name of Owner or Company.	No. of Deaths	Cause of Accident.
		MONMOUTHSHIRE—*continued.*			
8	January 13th	South Wales -	Lancaster's Steam Coal Collieries, Limited.	1	Run over on railway sidings.
26	May 3rd -	South Wales (Rose Heyworth).	Do. do. -	1	Strained by lifting materials on railway sidings.
36	August 23rd -	South Wales (Rose Heyworth).	Do. do. -	1	Run over by trams.
15	February 15th	Celynen -	The Newport Abercarn Black Vein Steam Coal Co., Limited.	1	Fall of roof.
18	February 27th	Do. -	Do. do. -	1	Run over by trams.
22	April 7th -	Do. -	Do. do. -	1	Fall of side.
44	November 27th	Do. -	Do. do. -	1	Fall of roof.
9	January 14th	Elliot - -	The Powell Duffryn Steam Coal Co., Limited.	1	Scalded by an escape of steam in an off set in shaft.
20	March 17th -	New Tredegar -	Do. do. -	1	Crushed by trams on surface.
33	July 11th -	Do. -	Do. do. -	1	Crushed when entering the cage at bottom.
14	February 13th	Tillery - -	The Powell's Tillery Steam Coal Co., Limited.	1	Crushed between buffers on railway sidings.
1	November 27th, 1893.	Rhymney. (*See* Glamorganshire.)	The Rhymney Iron Co., Limited.	1	Fall of roof (died 1894).
19	March 14th -	North Blaina -	J. and W. Stone - -	1	Fall of roof.
45	November 30th	Do. - -	Do. - -	1	Run over by trams.
16	February 19th	Tir-pentwys -	The Tir-pentwys Black Vein Steam Coal Co., Limited.	1	Run over by trams.
6	January 10th	Pochin - -	The Tredegar Iron and Coal Co., Limited.	1	Fall of side.
7	January 11th	Bedwellty (No. 2 Pit).	Do. do. -	1	Fall of roof.
25	May 3rd -	Pochin - -	Do. do. -	1	Crushed between tram and roof while riding on full tram.
37	August 30th -	Whitworth -	Do. do. -	1	Girl run over on branch railway.
39	October 4th -	Pochin - -	Do. do. -	1	Fall of roof.
47	December 14th	Whitworth -	Do. do. -	1	Fall of coal which he was wedging down at the face.
2	December 19th, 1893.	Risca - -	The United National Collieries, Limited.	1	Fall of roof (died 1894).
17	February 26th	Do. - -	Do. do. -	2	Fall of roof.
24	April 24th -	Varteg Hill -	J. Vipond & Co., Limited -	1	Run over on railway sidings on surface.
		SOMERSETSHIRE.			
43	November 2nd	Welton Hill -	Welton Hill Colliery Co. (The executors of the late W. B. Beauchamp).	1	Fall of roof.
11	January 25th	Radstock (Tyning Pit).	The trustees of Frances, late Countess of Waldegrave.	1	Fall of roof.

The non-fatal accidents are classified as follows :—

4	from explosions of firedamp	injuring	5 persons.
69	from falls of roof	"	70 "
39	" side	"	41 "
6	from explosions of powder and other explosives	"	7 "
16	on incline and engine planes	"	18 "
50	from trams and tubs	"	50 "
2	by machinery underground	"	2 "
6	in shafts from different causes	"	7 "
21	from miscellaneous causes underground	"	21 "
31	" " on the surface	"	31 "
244			252

Allegations having been made some years back that the majority of accidents occurred in the first hour of the shifts, owing to the workings not being examined before the men commence work, and in the hours after the 8th, when the men were physically unable to give due attention to the safety of their working places in consequence of exhaustion, the inspectors were instructed to include in their annual reports the hours of the shift in which the accidents occurred. Tables are given in the summaries of statistics for the several districts in regard to the fatal accidents throughout the kingdom. The following table shows the hours of work in which the fatal and non-fatal accidents occurred during the year in this district, viz. :—

—	Underground.												Above Ground.											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Fatal accidents	4	6	5	4	6	2	2	4	4	3	—	—	2	1	1	—	—	1	1	1	1	—	—	—
Non-fatal do.	18	20	27	25	22	22	15	25	21	17	3	—	3	2	5	2	1	7	4	—	2	2	—	1
Total fatal and non-fatal	22	26	32	29	28	24	17	29	25	20	3	—	5	3	6	2	1	8	5	1	3	2	—	1

The following table shows the distribution of fatal accidents and deaths among the respective firms under which they occurred during the past nine years, also the total number under each firm.

Names of the Owners of the Mines at which the Accidents occurred.	Fatal Accidents. The Deaths where exceeding the Number of Accidents are shown in ( ).									No. of Fatal Accidents and Deaths.
	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	
GLAMORGAN.										
Caerphilly Coal Co. (abandoned 1892).	—	—	—	2	—	2	Abandoned.			4
Cardiff Steam Coal Collieries Co., Limited.	—	—	1	1	—	1	—	1	1	5
Rhos Llantwit Coal Co., Limited.	1	—	1	—	—	(2) 1	1	Abandoned.		(5) 4
Rudry Merthyr Coal Co., Limited.	—	1	1	—	—	1	—	1	—	4
Rhymney Iron Co., Limited. { Glam. Mon. }	3	4	(3) 2	3	4	3	3	4	3	(30) 29
GLOUCESTER (BRISTOL).										
Coal Pit Heath Co.	1	—	—	—	1		—	1	—	4
Kingswood and Parkfield Collieries Co., Limited.	1	—	1	2	—	3	1	(4) 3	1	(13) 12

NOTE.—The figures in ( ) are the deaths resulting from the respective accidents.

Names of the Owners of the Mines at which the Accidents occurred.	Fatal Accidents. The Deaths where exceeding the Number of Accidents are shown in ( ). 1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	No. of Fatal Accidents and Deaths.
Gloucester (Bristol)—*cont.*										
Leonard, Boult, and Co., Limited.	(8) 1	—	—	1	—	—	—	—	2	(11) 4
Oldland Colliery Co., Limited.	—	—	—	—	—	—	—	—	1	1
Rangeworthy Colliery Co. -	1	—	Abandoned.							1
Gloucester (Forest of Dean).										
Crawshay, H., and Co., Limited.	2	—	1	—	2	1	—	1	—	7
Dean Forest Navigation Coal Co. (formerly P. Holmes and Son).	—	—	(3) 1	—	2	—	—	—	—	(5) 3
Foxes Bridge Colliery Co., Limited.	—	—	—	1	—	—	2	(3) 1	—	(6) 4
Lydney and Crumpmeadow Co., Limited.	—	1	—	—	—	1	—	—	—	2
Morse, T. - - -	—	—	—	1	—	—	—	—	—	1
New Bowson Coal Co. -	—	1	—	—	1	—	—	—	—	2
Old Norchard Colliery Co.	—	—	—	1	—	—	Abandoned.			1
Parkend Deep Navigation Collieries, Limited.	—	—	1	—	—	—	1	—	—	2
Park Iron Mines and Collieries Co., Limited.	—	—	—	—	—	1	—	—	—	1
Princess Royal Colliery Co.	—	—	—	—	1	—	—	—	—	1
Rosser, J. - - -	—	—	—	—	1	—	—	—	—	1
Richard Thomas & Co. -	—	—	—	—	—	—	1	—	—	1
Speech House Colliery Co., Limited (formerly Gt. Western Colliery Co., Limited.)	—	—	—	—	1	1	—	—	1	3
Trafalgar Colliery Co., Limited.	—	—	1	—	—	—	—	1	—	2
Wanklyn, E., and Co. -	—	—	—	1	—	—	—	—	—	1
Wilce, W. - - -	—	—	—	—	1	—	—	—	—	1
Monmouth.										
Abersychan Elled S. and H. Coal Co.	2	1	—	—	—	2	1	—	1	7
Bargoed Coal Co., Limited	—	—	—	—	—	—	—	—	1	1
Blaenavon Co., Limited -	2	5	1	4	3	2	(2) 1	1	2	(22) 21
Bryndu Coal & Coke Co., Limited (Glyn Colliery, Ebbw Vale Co.'s formerly).	Firm only working this colliery 1890 to 1894.						(4) 3	2	—	(6) 5
Cartwright, Executors of -	1	—	—	—	1	—	—	—	—	2
Clapp & Co. - -	—	—	—	—	1	—	—	—	—	1
Coalbrook Vale Colliery Co.	2	—	4	1	2	1	1	2	—	13
Diamond Llantwit - -	—	—	—	1	—	—	—	—	—	1
Ebbw Vale S., I., and C. Co., Limited.	6	3	(5) 4	7	(10) 6	3	3	2	7	(46) 41
Gelli and Tynybeddw Colliery Co., Limited.	—	1	—	—	1	—	1	—	—	3
James and Emmanuel -	1	—	—	—	—	—	—	—	—	1
Jones, Lewis, & Co. -	—	—	1	—	—	—	—	—	—	1
Lancaster, J., & Co. -	2	3	1	5	2	2	2	6	3	26
Lancaster Steam Coal Collieries, Limited (formerly South Wales Colliery Co.)	2	2	3	(5) 4	1	2	3	3	3	(24) 23
Latch, J., & Co. - -	1	—	—	—	—	—	—	—	—	1
Monmouthshire and Cwm Colliery Co.	2	—	1	—	—	—	—	—	—	3

Note.—The figures in ( ) are the deaths resulting from the respective accidents.

Names of the Owners of the Mines at which the Accidents occurred.	Fatal Accidents. The Deaths where exceeding the Number of Accidents are shown in ( ).									No. of Fatal Accidents and Deaths.
	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	
MONMOUTH—*cont.*										
Newport Abercarn &c. Co., Limited.	2	3	4	2	—	—	—	5	4	20
Partridge, Jones, & Co., Limited.	—	2	1	2	(180) 5	2	1	1	—	(189) 14
Patent Nut and Bolt Co., Limited.	1	3	1	2	2	—	—	(3) 2	—	(12) 11
Phillips, P. S. - -	1	—	—	—	—	—	—	—	—	1
Pond, C. - - -	—	—	—	—	—	1	—	—	—	1
Powell, Duffryn, S. Coal Co., Limited.	2	1	—	2	4	1	(7) 5	5	3	(25) 23
Powell's Tillery S. C. Co., Limited.	—	1	—	—	(3) 1	1	1	1	1	(8) 6
Rhymney Iron Co., Limited (*see* Glamorgan).	—	—	—	—	—	—	—	—	—	—
Smith, J. L., & Co. -	—	—	—	—	1	1	—	—	—	2
Smith, J. - - -	—	—	—	1	—	—	—	—	—	1
Stone, J. & W. - -	—	1	—	—	—	—	1	—	2	4
Tir Pentwys B. V. S. C. and Coke Co.	—	—	—	—	—	1	—	1	1	3
Tranch Colliery Co. -	—	—	—	—	—	1	—	1	—	2
Tredegar Iron and Coal Co., Limited.	3	10	(6) 5	6	2	7	5	3	6	(48) 47
United National Collieries, Limited. — Risca -	(4) 3	—	3	—	2	—	3	—	(3) 2	(15) 13
United National Collieries, Limited. — Abercarn	2	3	—	1	1	3	2	—	—	12
Vipond, J., & Co. -	2	1	2	2	—	—	2	1	1	11
Williams, J. - -	—	—	—	—	—	1	—	—	—	1
SOMERSET.										
Ashton Vale Iron Co., Limited.	2	3	3	(4) 2	2	3	(2) 1	—	—	(19) 16
Bedminster Coal Co. -	(11) 2	—	1	(5) 2	—	1	2	—	—	(20) 8
Bristol Collieries Co., Limited.	—	1	—	—	1	(10) 1	—	—	—	(12) 3
Daubeney and Scobel -	(4) 1	1	—	—	—	—	—	—	—	(5) 2
Edford Colliery Co. -	(2) 1	—	—	—	—	—	—	—	—	(2) 1
Evans, W., & Co. - -	1	—	—	—	—	—	—	—	—	1
Farrington Colliery Co. -	2	1	1	—	—	—	—	—	—	4
Hollwey, C., Trustees of -	—	—	1	—	1	—	—	—	—	2
Jarret, Miss A. M. -	—	—	—	—	—	—	1	(3) 2	—	(4) 3
Kilmersdon Colliery Co. -	—	—	1	—	—	—	—	—	—	1
New Rock Coal Co. -	—	—	—	—	—	—	—	1	—	1
Warwick, Earl of - -	—	—	1	1	—	—	—	—	—	2
Welton Hill Colliery Co. -	1	—	—	—	—	—	1	—	1	3
Waldegrave, Trustees of the late.	2	—	1	—	—	1	1	—	1	6
Westbury Iron Co., Limited	—	—	—	—	2	—	1	—	—	3
Writhlington, Huish, and Foxcote.	—	—	—	1	1	—	—	1	—	3
Totals - -	(80)59	53	(55)50	(65)59	(237)56	(63)53	(56)51	(58) 53	(49)48	(715) 482

NOTE.—The figures in ( ) are the deaths resulting from the respective accidents.

Explosions of Firedamp and Coal Dust.

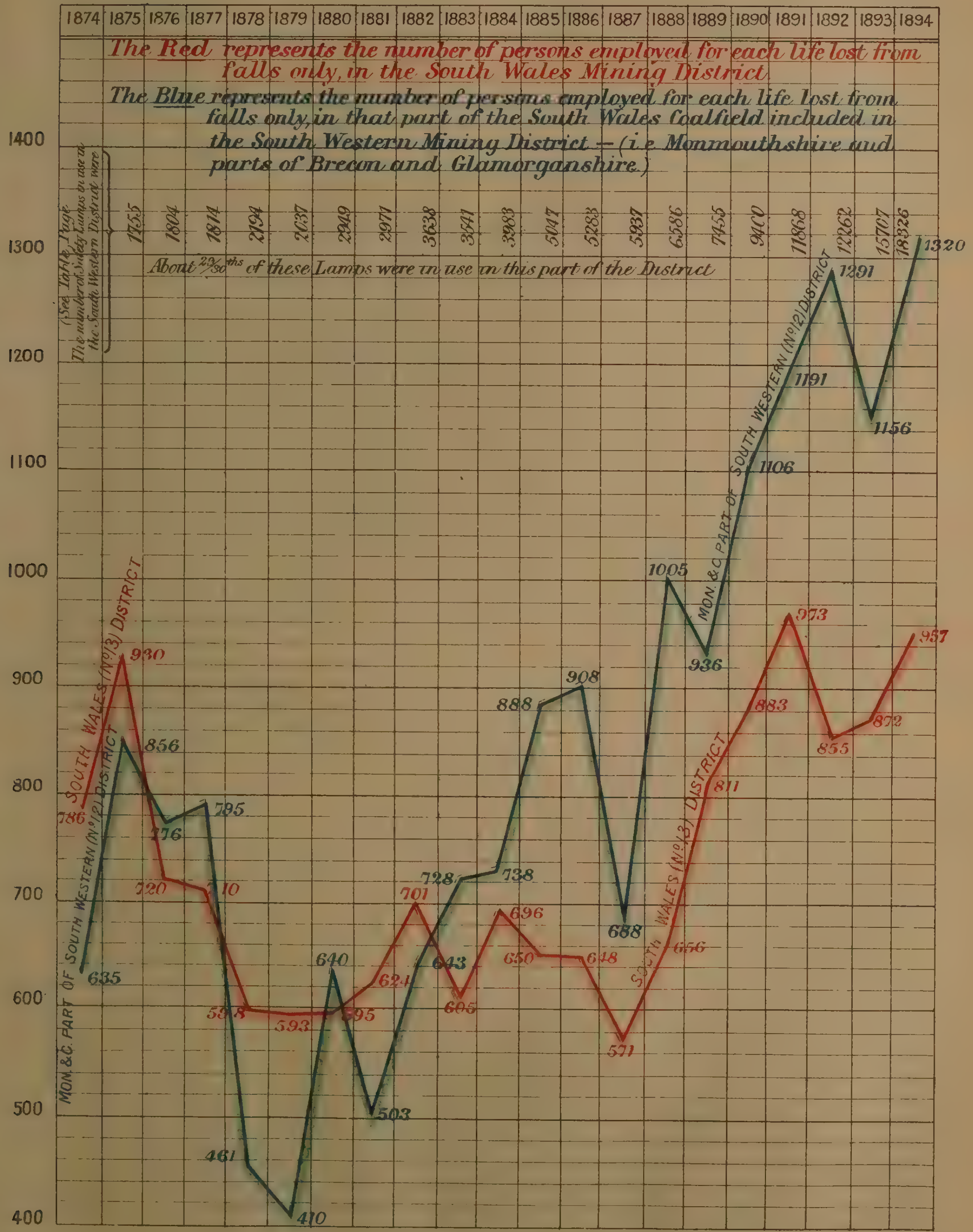
There has been no fatal explosion of this class during the year.
The non-fatal explosions were:—

Date.	Mine.	Owners.	No. of Persons injured.	Circumstances.
1894. Jan. 16	Rhymney - (Clay Level.)	The Rhymney Iron Co., Limited.	1	A small quantity of gas accumulated in a hole in the roof, in consequence of a fall which occurred in the waste, and which interrupted the ventilating current. Naked lights were used in these workings, and the ignition occurred on the collier entering the place to commence work.
Feb. 27	Blaenavon (Forge Slope.)	The Blaenavon Co., Limited.	1	A small quantity of gas accumulated in a cavity in the roof near the outer end of a stall road, which was stowed up tight to within 5 or 6 yards of the end, and partly so out past this cavity.
June 18	Pentwyn	Ebenezer Phelps	2	This occurred in a level driven in about 50 yards from the side of the hill to work some pillars and crop coal formerly left. Gas came out from the old workings, and had apparently been found several times previously. Safety-lamps were used in the place, together with naked lights, but there was no discipline of any description. The accumulation fortunately was only a small one, and not more than about 25 yards from the mouth of the level.
Dec. 18	Blaenavon (Dodd's Slope.)	The Blaenavon Co., Limited.	1	In the morning, on entering his stall in the ¾ seam, 3,400 yards from the mouth of the slope, with a naked light, he ignited a small quantity of gas, and was burned about the hands and face. The fireman who was in the airway between this and the next stall on the in-bye side was not burned, nor was his light extinguished, and a lad who was at the mouth of the airway in the stall on the out-bye side was also not injured, nor was his light put out. No gas appears to have been seen in the vicinity before or after the occurrence.

Falls of Roofs and Sides.

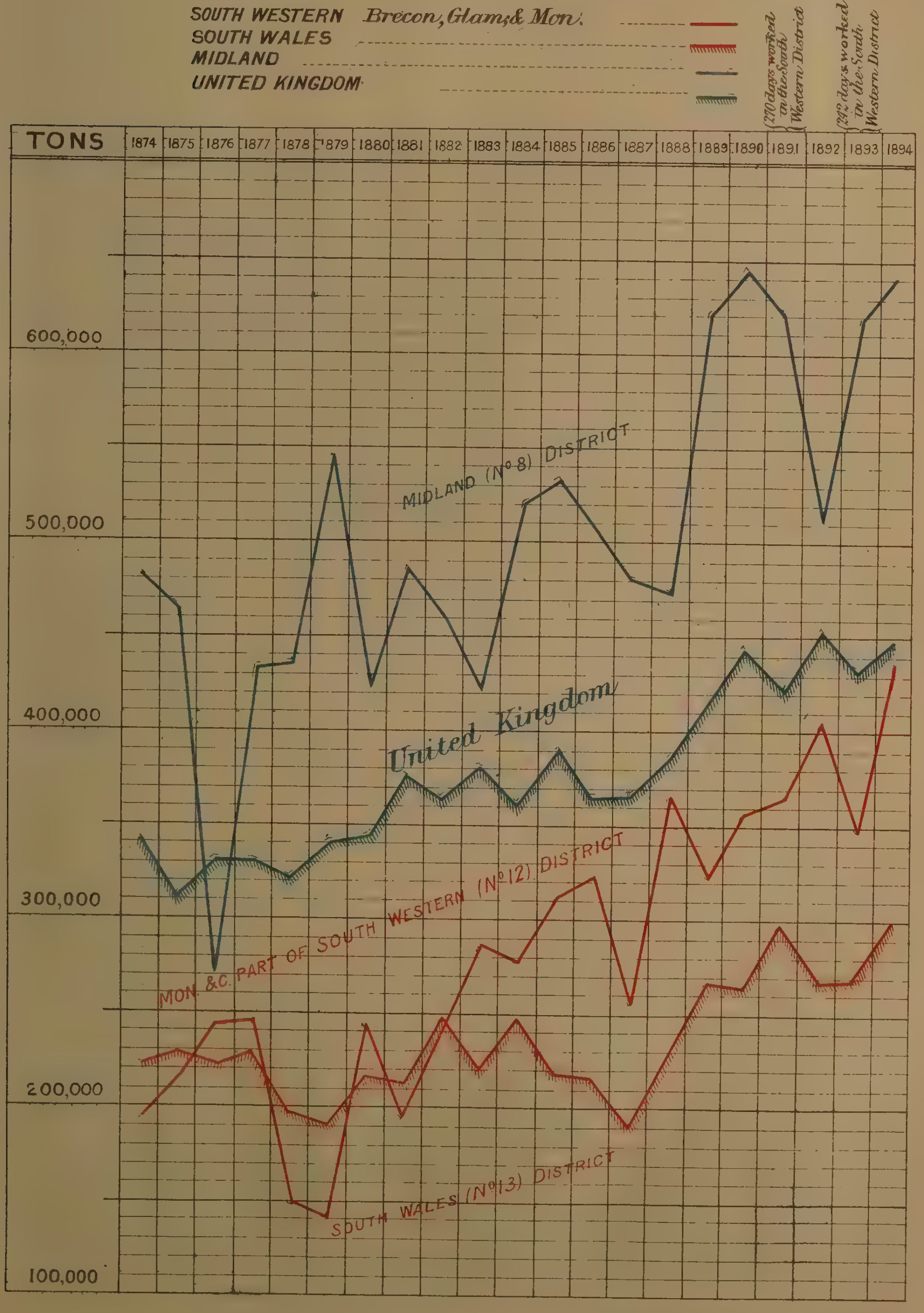
Of the 25 fatal accidents and 26 deaths which occurred during the year, twenty-two accidents and twenty-three deaths were from falls of roof, while three accidents and three deaths occurred from falls of sides. Although these figures are not actually lower than have been recorded (being the same as in 1892), they show a better ratio of persons employed and mineral raised for each accident and death than has been previously shown. The diagrams facing this page show the relative results for the past 23 years in the South Wales Coalfield portion of the district, where $\frac{28}{30}$ths of the safety-lamps are used. The diagrams distinctly prove that the anticipations and opinions always advanced against the use of safety lamps and urged at the arbitration which I had with the Patent Nut and Bolt Company, Limited, in 1891–92, by Messrs. T. Foster Brown and Galloway, Mining Engineers, the Manager (Mr. Jacobs), the Under-officials and the Workmen of Cwmbran Colliery, were ill-founded as to the use of safety-lamps being likely to increase the number of accidents from falls. The views which my colleagues and I then advanced, that with lamps, and strict discipline in regard to spragging and timbering, the accidents would be reduced, has been

Diagram showing the Number of Persons employed Underground for each Death from Falls of Roof and Sides in the South Wales Mining District and in the Monmouthshire Brecon and Glamorganshire part of the same coalfield, included in The South Western Mining District



Wyman & Sons, Ltd. Lith. 63. Carter Lane. 6914. 2. 95.

Diagram shewing the Number of Tons of Mineral raised for each Death from Falls of Roof and Sides respectively in the United Kingdom. " " Midland Mining District. " " South Wales Mining District. and in the Monmouthshire, Brecon, & Glamorganshire, part of the South Wales Coalfield included in the South Western Mining District.



Wyman & Sons, Ltd. Lith. 63, Carter Lane. 6914. 2. 95

clearly demonstrated to be correct, and the course pursued of urging their introduction has been fully vindicated; all the more so as the output from the so-called steam coal seams of South Wales is now so very much larger in proportion to the total output of the district than it used to be, as well as being from greater depths. These are the seams which the South Wales Mining Engineers and Colliery Managers allege are so treacherous and different to seams in other Coalfields as to account for the exceptionally high death rate in the South Wales Inspection District. Hence I consider all the more credit is due to the Owners, Officials, and Workmen in this District.

The diagrams show the respective results in the South Wales Coalfield, of the South Wales Inspection District, and of this District, and I am happy to see it so comparatively favourable to this one. How to account for the difference is the question. "Face slips," "back slips," "blind slips," bad roof, and such like dangers and difficulties, made so much of by the Managers in the other District, also occur in the same seams in this one. It appears to me that a difference in the supervision and enforcement of the requirement as to spragging and propping must exist. Owners and Officials in this district have reason to be gratified at the results of their exertions, and the workmen, too, should feel grateful to them. There is apparently an absence of stern Magisterial support in enforcing the rules in the other district, when cases are brought forward and proved. This disheartens the officials, who say it is absolutely useless, if not injurious, to take a case into court, and consequently they not unnaturally pass over dangerous contraventions rather than have the trouble and unpleasantness without the support necessary and desirable for reducing this class of accident. The Stipendiary at Merthyr has recently, as reported in the newspapers, decided one of these cases in a manner which is likely to result in many accidents occurring, the decision being subversive of all discipline and authority on the part of the management. In a seam well known to contain "back," "face," and "blind" slips, which cannot be seen at times until the coal is released, the collier was engaged holing under the coal, there being several yards holed without any sprags when the Manager visited the place. He subsequently summoned the collier as an example to the men generally, as he considered it a bad case. In court he stated these facts, and that with the coal, overhanging as it was, *sprags were necessary as a precaution for the man's safety.* The Miners' Association, I was surprised and sorry to see, contended that the collier was the person to judge whether sprags were necessary and not the Manager, and the Stipendiary decided, upon the evidence of the collier, &c., and because the coal had not fallen within a day or two afterwards, that it was not necessary for him to have set sprags. *He practically decided that, because the coal had not fallen and probably injured or killed the man, it was not necessary to have sprags set.*

I am happy to say that *in this district the Justices consider the rule is for the purpose of guarding against the effect of unseen slips and dangers,* which too frequently, even with sprags set within the maximum distance stated in the 22nd General Rule, bring about accidents, and they support the authorities rigorously and sternly with regard to spragging, thinking it thankless work to wait for actual proof by a man being injured or killed. It is not improbable that such decisions and absence of support for the authorities plays a considerable part in causing the difference in the relative loss of life between the two sections of the Coalfield as shown by the diagrams, as well as generally between the two districts.

In Shafts.

Two fatal accidents, attended with a like number of deaths, occurred in shafts during the year.

At the Cardiff Steam Coal Collieries Co.'s Colliery eight men were descending to carry out some repairs in the Little Rock Seam, on Saturday afternoon, the 6th January. The day men had previously all come out and, in order to allow of water winding during the week-end, the hitcher, before leaving, had removed the staging on which, during coal winding, the cage alighted at this mouthing. On reaching the mouthing, without looking to see whether the stage was down or not, and probably being more or less sun-blind, he stepped out of the cage and fell down the shaft into water 180 yards below, his body not being recovered for a week or 10 days.

At the Powell Duffryn Steam Coal Company's New Tredegar (No. 1 Pit), while the hitcher was "setting on" a tram at the bottom, the cage was started through some bungling as to signals, and he was taken 5 or 6 yards up with it, crushed against the guide, and then fell back down to the landing.

The non-fatal shaft accidents were :—

Date.	Mine.	Situation.	Owners.	No. of Persons injured.	Causes.
1894. Jan. 13 -	New Tredegar (No. 1 Pit).	New Tredegar (Mon.).	The Powell Duffryn Steam Coal Co., Limited.	1	A piece of coal or stone fell from the ascending cage and struck him.
Feb. 23 -	Trafalgar -	Forest of Dean (Glos.).	The Trafalgar Colliery Co., Limited.	1	While descending the shaft he let his arm protrude beyond the cage, and it came in contact with something.
Feb. 26 -	Arral Griffin -	Aberbeeg (Mon.).	John Lancaster & Co., Limited.	1	Stone from side of sinking pit.
Feb. 26 -	Oxenhall -	Newent (Glos.).	Captain Onslow -	2	While descending in a bucket, by a hand or jack roll on second motion the cogwheel broke, and they dropped some yards owing to the break failing to act.
Feb. 28 -	Greyfield -	Clutton (Somerset).	The Earl of Warwick	1	Stone from side of sinking pit struck his head.
Aug. 23 -	Sirhowy (No. 7 Pit).	Sirhowy (Mon.).	The Ebbw Vale Steel, Iron, and Coal Co., Limited.	1	While engaged putting the haulage rope over a pulley at the mouthing, one of the wooden troughs through which the rope runs in the shaft fell and injured his hand and wrist.

By Explosives.

There has been no fatal accident during the year connected with the use of explosives. The following are the non-fatal accidents which occurred :—

Date.	Mine.	Owners.	No. of Persons injured.	Circumstances.
1894. Jan. 6 -	Kingswood (Deep Pit).	The Kingswood and Parkfield Collieries Co., Limited.	1	A spark from his candle fell into the powder while he was engaged charging a hole.
March 8 -	Tredegar (Whitworth Pit).	The Tredegar Iron and Coal Co., Limited.	1	Unramming a shot which had missed fire.
March 20 -	Llanhilleth Pit -	Partridge, Jones, & Co., Limited.	1	Forcing compressed powder down into a hole which was too small. He was, after recovery, fined 10*s.* and 5*s.* costs before the justices for doing so.
May 29 -	Hanham -	Leonard, Boult, & Co., Limited.	1	When firing a shot with a squib he unintentionally lit the squib instead of the match.
June 7 -	Kingswood (Deep Pit).	The Kingswood and Parkfield Collieries Co., Limited.	1	While he and his partner were engaged charging a hole the powder became ignited.
June 8 -	Penyfan -	Christopher Pond -	2	Apparently while forcing a cartridge of gelignite into a hole in "rock" it exploded.

Trams and Tubs.

A collier at Tirpentwys Colliery engaged on the 19th of February taking a skip of coal off a pillar up the side of a roadway failed to get out of the way of a journey of trams which a haulier was taking out to the shaft.

A door boy at Celynen Colliery, on the 27th February, when walking along a roadway with a haulier in front of a horse, got his foot fast in a crossing plate of the rails, and before he could extricate it he was run over.

An experienced haulier at Pochin Colliery, on the 3rd May, while riding out on the horse chain or "Gun," appears to have forgotten a certain low place in the road, and his head was crushed there between the timbers and the loaded tram.

A door boy at Blaina Collieries (Griffin No. 2 Pit), on the 11th August, having left his door, was found about 50 yards distant crushed between a full tram and the side of the roadway. It would seem as if the boy had not been properly instructed as to his duty of staying beside the door.

A haulier at South Wales Colliery on the 23rd August was run over by full trams which he was to have taken to the shaft. The haulier who brought them from the face to the parting where the horses changed, let them move forward, after releasing his horse, in the form of a flying shunt, in order to allow of their blocking against others to make up the journey, deceased intended but missed getting his sprags into the wheels, and in subsequently trying to stop the trams apparently got in front and was run over. Part of the siding was much too steep, and quite unsuited for the purpose. It was, in my opinion, a dangerous place for the purpose. It has since been altered, and I hope this unfortunate experience will be taken to heart, and that no further sidings or double partings will be made on inclined roads.

A collier's boy at Ebbw Vale Collieries (No. 22 Pit), on the 16th October, was with his collier returning up their stall road, they heard the haulier call to get clear as his trams were overpowering the horse; the collier retreated a few yards into the heading, while the boy attempted, but in some way failed, to get clear by standing at the side, and consequently received fatal injuries.

A haulier at North Blaina Colliery, on the 30th November, took his journey too far on a steep road before spragging the wheels, and then while trying to do so, stumbled in front of the trams and was run over. He had, it appears, been driving on the road for two or three days previously, and should have known it; the irregularity and steepness of roads used for hauling heavy trams with horses in the South Wales Coalfield is a constant source of danger, and results in frequent fatalities.

A door boy at Abernant Colliery, on the 4th December, having left the door which he was in charge of and commenced assisting at the siding, or double parting to shove the trams up for coupling together, had his arm fractured by being caught between two trams. It was not expected to be more than a simple fracture, but he was, it seems, a very puny little fellow, and death resulted from shock in a few days.

On the Surface.

Eight accidents occurred on the surface, six of which were on the sidings and branch railways, one on a tram line, and one a strain in unloading pit timber, readily accounted for by previous delicacy.

Enforcement of the Requirements of the Act and of the Special Rules.

By your directions I instituted proceedings, which were heard during the year, in the following cases :—

Mine.	Description of Offender.	Contravention.	Result of Trial.	Penalty.	Costs.
				£ s. d.	£ s. d.
New Clydach Colliery -	Owner - -	Omitting to give notice of commencing work.	Conviction -	2 0 0	0 6 11
" "	" - -	" publish abstract - -	" -	0 0 6	0 6 6
" "	" - -	" " Special Rules -	" -	0 0 6	0 6 6
" "	" - -	" examine working places before work.	" -	0 0 6	0 6 6
" "	" - -	" have a plan of the workings	" -	0 0 6	0 6 6
Lanerch - -	Owner - -	Omitting to give notice of commencing work.	Conviction -	1 0 0	0 6 11
" - -	" - -	" publish abstract - -	" -	0 0 6	0 6 6
" - -	" - -	" establish Special Rules -	" -	0 0 6	0 6 6
" - -	" - -	" examine working places before work.	" -	0 0 6	0 6 6
" - -	" - -	" have a plan of the workings	" -	0 0 6	0 6 6
Pwlldu - -	Owner - -	Omitting to give notice of commencing work.	Conviction -	2 0 0	0 6 11
" - -	" - -	" publish abstract - -	" -	0 0 6	0 6 6
" - -	" - -	" establish Special Rules -	" -	0 0 6	0 6 6
" - -	" - -	" examine working places before work.	" -	0 0 6	0 6 6
" - -	" - -	" have a plan - -	" -	0 0 6	0 6 6
Cefn - -	Owner - -	Omitting to give notice of commencing work.	Conviction -	1 0 0	0 6 0
" - -	" - -	" publish abstract - -	" -	—	0 6 0
" - -	" - -	" establish Special Rules -	" -	—	0 6 0
" - -	" - -	" examine working places before work.	" -	—	0 6 0
" - -	" - -	" examine machinery and report book.	" -	—	0 6 0
" - -	" - -	" fence dangerous parts of machinery.	" -	—	0 6 0
" - -	" - -	" have a plan of the workings	Withdrawn.	—	—
" - -	" - -	Using a single link chain for men to ride in shaft.	Conviction -	—	0 6 0
Paragon - -	Owner - -	Inadequate ventilation - - -	Conviction -	2 0 0	0 11 6
" - -	" - -	Working without second outlet - -	Not proceeded with on payment of costs.	—	0 11 6
" - -	" - -	Reports of condition of the mine not being accurate.	" -	—	0 11 6
" - -	Manager -	Inadequate ventilation - - -	Conviction -	2 0 0	0 11 6
" - -	" - -	Working without second outlet - -	Not proceeded with on payment of costs.	—	0 11 6
" - -	" - -	Reports of the condition of the mine not being accurate.	" -	—	0 11 6
Rock Colliery - -	Owner - -	Reports of the condition of the mine not being accurate.	Conviction -	5 0 0	Included.
" - -	" - -	Horses rubbing slightly at a few places against the roof or timbers.	Withdrawn.	—	—
" - -	" - -	Not constantly providing adequate ventilation.	" -	—	—
" - -	" - -	Not having plan at the mine - - -	" -	—	—
" - -	Manager -	The same cases were charged, but were dismissed, in consequence, the magistrates stated, of the manager having been very seriously ill. I quite sympathised and agreed with this under the circumstances, but was obliged to formally take the cases as under the Act he was responsible before the under-manager.	—	—	—
" - -	Under-manager	Reports of the condition of the mine not being accurate.	Conviction -	2 0 0	Included.
" - -	" -	Not constantly providing adequate ventilation.	Withdrawn.	—	—
" - -	" -	Horses rubbing slightly at a few places against the roof and timbers.	"	—	—

MAGISTERIAL PROCEEDINGS ON THE PART OF OWNERS, &c. AGAINST WORKMEN.

With a view to enforcing the requirements of the Act and Special Rules, and relieving themselves of responsibilities which were considered to belong to the workmen, the following Owners, or their Agents, and Managers have instituted Magisterial proceedings against the offenders for various contraventions, with the results stated, viz. :—

Name of Company by or for whom the Proceedings were instituted.	Date and Place of Hearing.	Nature of Contravention and Rule.	Result.
The Coalbrook Vale Coal Co.	1894. Jan. 12 Blaina	Illtreating a horse - - - S.R. 62	Fined 20*s*.
Henry Crawshay & Co., Ltd.	Nov. 9 Little Dean	Returning too soon to a missed shot S.R. 72	8*s*. costs, and to come up for judgment if called upon.
The Lydney and Crump-meadow Collieries Co., Ltd.	May 25 ,,	Neglecting to sprag - G.R. 22 & S.R. 66	Had to pay cost of summons.
	Dec. 18 ,,	Taking powder into mine otherwise than in a secure case or canister G.R. 12	7*s*. 6*d*. costs, and to come up for judgment if called upon.
The Newport Abercarn Black Vein Steam Coal Co., Ltd.	Jan. 19 Blackwood	Sleeping in mine while in charge of a lighted safety-lamp - - S.R. 67	Dismissed with a caution in consequence of having pleaded illness.
	Feb. 3 ,,	Neglecting to sprag - G.R. 22 & S.R. 66	Fined 10*s*.
	,, ,,	Four men for neglecting to sprag - - - G.R. 22 & S.R. 66	,, 20*s*. each.
	,, ,,	Two men for riding on engine plane without permission - - S.R. 59	,, 10*s*. ,,
	,, ,,	Having a pipe in his possession in the mine - - - - S.R. 91	Dismissed with a caution.
	,, ,,	Leaving cage before it had been brought to a standstill - - S.R. 57	Fined 20*s*.
	,, ,,	Presenting a false certificate of birth - - - - Sec. 64	,, 36*s*.
	Mar. 2 ,,	Four men for neglecting to sprag - - G.R. 22 & S.R. 66	,, 20*s*. each.
	,, ,,	Presenting a false certificate of birth - - - - Sec. 64	,, 20*s*. and 16*s*. costs.
	Apr. 27 ,,	Leaving brattice door open - - S.R. 67	,, 10*s*. ,, 9*s*. 6*d*. ,,
	,, ,,	,, ,, ,, - S.R. 67	,, 10*s*.
	,, ,,	Breaking brattice door and leaving it open - - - - S.R. 67	,, 20*s*.
	,, ,,	Not properly shackling journey of trams - - - - S.R. 67	,, 40*s*.
	,, ,,	Two men for sleeping in mine while in charge of a lighted safety-lamp - - - - S.R. 67	,, 20*s*. each.
	,, ,,	Neglecting to sprag - G.R. 22 and S.R. 66	,, 10*s*.
Partridge, Jones, & Co., Ltd.	May 26 Pontypool -	Pressing explosive into hole of insufficient size - - - G.R. 12	,, 10*s*. and 5*s*. costs.
	,, ,,	Not placing his safety-lamp beyond the swing of his pick - - S.R. 94	,, 10*s*. ,, 5*s*. ,,
	June 2 ,,	Neglecting to sprag - G.R. 22 & S.R. 66	17*s*. 6*d*. costs
	Dec. 8 ,,	Having matches in his possession in the mine - - - S.R. 91	Fined 20*s*. and 5*s*. costs.
	,, ,,	Neglecting to sprag - - G.R. 22 & S.R. 66	,, 20*s*. ,, 5*s*. ,,
	,, ,,	Sleeping in mine while in charge of a lighted safety-lamp - - S.R. 67	,, 10*s*. ,, 5*s*. ,,
Powell Duffryn Steam Coal Co., Ltd.	Mar. 27 Tredegar -	Neglecting to sprag - G.R. 22 & S.R. 66	9*s*. costs.
	Apr. 10 ,,	,, ,, - ,, ,,	Fined 20*s*.
	,, ,,	,, ,, - ,, ,,	Dismissed.
	July 3 ,,	Allowing boy to ride on trams on engine plane without manager's permission - - - - S.R. 59	Fined 5*s*.
	,, ,,	Two men for sleeping in mine while in charge of a lighted safety-lamp - - - S.R. 67	,, 20*s*. each.
	,, ,,	Having a pipe in his possession in the mine - - - - - S.R. 91	,, 10*s*. 6*d*.
The United National Collieries, Ltd.	Apr. 13 Blackwood	Allowing a horse to stray in the mine - - - - - S.R. 62	,, 1*s*. and 10*s*. costs.
	,, ,,	Illtreating a horse - - - S.R. 62	,, 57*s*. 6*d*.
	Sept. 3 ,,	For leaving a door open - - S.R. 67	,, 5*s*.
	,, 17 ,,	Illtreating a horse - - - S.R. 62	,, 40*s*.

List of Apologies.

As in previous years, in lieu of magisterial proceedings, the Mines Executives have in the following cases accepted apologies (with payments of cost of printing or donations to some institution or benevolent fund, and in some cases both combined). These apologies were printed and posted up at the works as a warning to others.

Name of Company.	Date.	Nature of Contravention and Rule.		Amount paid to some Institution or Benevolent Fund.
	1894.			s. d.
The Coalbrook Vale Coal Co.	April 23	Neglecting to sprag	G.R. 22 & S.R. 66	—
	„ 27	„ „	G.R. 22 & S.R. 66	—
	June 12	Leaving cage whilst in motion	S.R. 52	5 0
	„ 29	Leaving a tram under a sheet	S.R. 67	10 0
The Ebbw Vale Steel, Iron, and Coal Co., Ltd.	April 5	Two men for having a pipe in their possession in the mine	S.R. 91	40 0 each
	„ 5	Having a match in his possession in the mine	S.R. 91	20 0
	„ 5	Having a pipe and three matches in his possession in the mine	S.R. 91	20 0
Leonard Boult & Co., Ltd.	November 21	Two men for neglecting to sprag	G.R. 22 & S.R. 66	Paid for the printing of apology.
	December 12	Smoking in mine	S.R. 92	Paid for the printing of apology.
				s. d.
Partridge, Jones, & Co. Ltd. United National Collieries, Ltd.	March 29	For riding on train without permission	S.R. 59	2 0
	April 27	Damaging gauze of lamp	S.R. 84	5 0
	„ 27	„ „ „	S.R. 84	5 0
	„ 27	Exposing a horse to danger	S.R. 62	5 0
	June 14	Damaging gauze of lamp	S.R. 84	5 0
	„ 19	Leaving ventilating door open	S.R. 67	5 0
	„ 21	„ „ „	S.R. 67	5 0
	„ 21	Improper use of lamp	S.R. 98	5 0
	„ 21	Sleeping in mine while in charge of a lighted safety-lamp	S.R. 67	20 0
	August 14	Sleeping in mine while in charge of a lighted safety-lamp	S.R. 67	10 0
	„ 16	Neglecting to sprag	G.R. 22 & S.R. 66	2 6
	November 7	Damaging gauze of lamp	S.R. 84	2 6
	November 28	Damaging gauze of lamp	S.R. 84	10 0
	„ 29	„ „ „	S.R. 84	10 0
	December 1	Getting into cage whilst in motion	S.R. 52	10 0

RELATING TO MANAGERS' AND UNDER MANAGERS' CERTIFICATES.

The Board of Examination for Managers' and Under Managers' Certificates of Competency under the Coal Mines Regulation Act consists of :—

Owners of Mines.

E. Broderip, Esq., Cossington Manor, Bridgwater, Chairman.
E. Jones, Esq., Snatchwood House, Pontypool, Vice-chairman.
T. H. Deakin, Esq., Parkend, Glos.

Mining Engineers.

W. Morgans, Esq., The Guildhall, Bristol.
J. T. Green, Esq., South Side, Sneyd Park, Clifton, Bristol.
Robert Jordan, Esq., Clytha Park, Newport, Monmouthshire.

Working Miners.

Mr. A. Cullen, 2, Norwood Terrace, Coleford, near Bath.
Mr. W. Steadman, Ebbw Vale, Monmouthshire.
Mr. D. Williams, Cross House, Kenfig Hill, Bridgend.

H. M. Inspector of Mines.

Joseph S. Martin, Esq., Durdham Park, Bristol.

Secretary.

Sydney J. Thomas, Esq., Coleford, Gloucestershire.

There has been no change in the constitution of the board during the year.

Mr. J. Fox Tallis, of Ebbw Vale, who is not a member of the board, was appointed an examiner in the room of Mr. Abraham, along with Messrs. Morgans and Green, members of the board.

The examinations were held in Newport for Managers' Certificates, on the 4th, 5th, and 6th of September when 12 candidates presented themselves, three of whom were reported as having qualified; and for Under-Managers' Certificates, on the 11th, 12th, and 13th of September, when 54 candidates attended, of whom 15 were reported to have qualified.

The questions will be found appended. The standard of qualification which the board considers colliery managers should possess is indicated by publishing the questions. There is also a *vivâ voce* examination to further test the candidates' knowledge of practical mining.

The following table shows the number of candidates examined and the numbers of those who qualified for Certificates in this District, from the year 1873 down to and including the examination in 1894.

Managers (1st Class).

Date.	Number of Candidates.	Number passed.	Date.	Number of Candidates.	Number passed.
1873, July	11	5	1883, July	14	8
„ December	4	1	1884, „	12	6
1874, July	7	5	1885, „	26	7
„ December	8	5	1886, „	19	7
1875, July	17	9	1887, „	20	6
1876, „	11	4	1888, „	7	4
1877, „	9	7	1889, „	9	4
1878, „	9	6	1890, „	10	5
1879, „	11	6	1891, September	9	4
1880, „	13	10	1892 „	13	3
1881, „	9	5	1893 „	11	2
1881, December	13	7	1894 „	12	3
1882, July	10	6			

Under Managers.

Date.	Number of Candidates.	Number Passed.
1888, July	44	36
1889, „	24	14
1890, „	24	9
1891, September	25	13
1892, „	35	15
1893, „	39	24
1894, „	54	15

TABLE showing where the CANDIDATES for MANAGERS' CERTIFICATES under this BOARD came from.

—	1886.		1887.		1888.				1889.				1890.			
	1st Class.		1st Class.		1st Class.		2nd Class.		1st Class.		2nd Class.		1st Class.		2nd Class.	
	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.
Breckonshire	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Glamorganshire	13	5	12	3	5	3	10	10	4	2	6	4	5	3	7	4
Gloucestershire (Bristol)	—	—	—	—	—	—	1	—	—	—	1	1	1	—	—	—
Gloucestershire (Forest of Dean)	—	—	1	1	1	1	8	6	2	—	2	2	—	—	2	1
Monmouthshire	6	2	6	2	1	—	19	15	2	1	13	5	4	2	11	3
Somersetshire	—	—	—	—	—	—	6	5	1	1	2	2	—	—	4	1
Yorkshire	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Flintshire (Ruabon)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lancashire	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals	19	7	20	6	7	4	44	36	9	4	24	14	10	5	24	9

—	1891.				1892.				1893.				1894.			
	1st Class.		2nd Class.		1st Class.		2nd Class.		1st Class.		2nd Class.		1st Class.		2nd Class.	
	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.	Candidates.	Passed.
Breckonshire	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2
Glamorganshire	2	1	5	3	8	—	19	8	4	—	14	8	8	2	25	6
Gloucestershire (Bristol)	—	—	—	—	2	1	—	—	—	—	—	—	—	—	—	—
Gloucestershire (Forest of Dean)	1	1	6	1	—	—	3	—	1	—	7	3	1	—	5	2
Monmouthshire	5	2	12	8	2	1	11	7	4	—	15	10	3	1	17	3
Somersetshire	1	—	1	1	—	—	1	—	1	1	1	1	—	—	4	2
Yorkshire	—	—	—	—	1	1	—	—	—	—	—	—	—	—	1	—
Flintshire (Ruabon)	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Lancashire	—	—	—	—	—	—	1	—	1	1	2	2	—	—	—	—
Totals	9	4	25	13	13	3	35	15	11	2	39	24	12	3	54	15

EXAMINATION PAPERS

FOR

MANAGERS' CERTIFICATES OF COMPETENCY, SEPTEMBER 1894.

No. 1. SUBJECT—ARITHMETIC.

(60 *marks to qualify.*)

	Number of Marks for each Question.
1. Multiply $\frac{5}{6}$ of $\frac{3}{11}$ of $\frac{1}{35}$ by $\frac{9}{11}$; and divide $\frac{6}{11}$ by $\frac{1}{3}$ of $\frac{6}{15}$ - - -	20
2. By drawing 453·75 gallons of water from a square tank, the surface of the water falls $\frac{6}{10}$ths of an inch. What is the inside measurement of one side of the tank?	20
3. According to a colliery cost-sheet coal is delivered at the pit-bank at a cost of 5*s.* 9·77*d.* per ton. What would be the respective costs at— (1.) An advance of $13\frac{1}{4}$ per cent.? (2.) A reduction of $6\frac{3}{4}$ per cent.?	10
4. If the average cost of sinking a shaft to a depth of 540 yards will amount to £18 per yard, and 23 per cent. of the strata sunk through will cost 45 per cent. more than the average cost, what will be the average cost per yard for sinking the remaining 77 per cent.?	20
5. The circular upcast shaft of a colliery is 20 feet in diameter, and the air current passes through it at a mean velocity of 13 feet per second, being supplied by four returns, as follows:— No. 1 return has an area of 100 feet, and the mean velocity of the air current is 10 feet per second. No. 2 return has an area of 80 feet, and the mean velocity of the air current is 12 feet per second. The areas of Nos. 3 and 4 returns are each 70 feet. What will be the mean velocity per second of the air currents in Nos. 3 and 4 returns respectively, assuming that the quantities of air passing through them are in the proportion of 45 to 55?	30
Maximum marks - - -	100

No. 2. SUBJECT—SURVEYING.

(60 *marks to qualify.*)

	Number of Marks for each Question.
1. Make a sketch of a vernier, and explain its use when fitted to instruments -	20
2. By means of instruments provided, plot the following survey to a scale of 2 chains to an inch :— S 18° W - - - 420 links; S 40° E - - - 350 „; N 10° E - - - 600 „	20
3. Describe any form of Miner's Dial you are acquainted with, pointing out the advantages you have experienced by the use of it underground.	10
4. Work out the quantity of coal contained in 1 acre of a seam of the following section :— Top coal - - - - 2 ft. 3 in.; Clod - - - - 0 ft. 11 in.; Bottom coal - - - 2 ft. 9 in. Specific gravity of coal, 1·25.	20
5. Work out the horizontal base and the vertical height of an inclined plane 25·65 chains long, which rises 1 in 4.	30
Maximum marks - - -	100

No. 3. SUBJECT—GASES AND VENTILATION.

(110 *marks to qualify.*)

1. Name the principal gases met with in coal mines, and the gases composing the atmosphere, giving the chemical symbol and the specific gravity of each gas.	10
2. Describe the water-guage and its utility in mining - - - -	20
3. In a heading 7 feet 6 inches × 6 feet 8 inches the air travels 40 yards in 12 seconds under a pressure of 2·5 in. W. G. What is the effective horse-power of the ventilation?	20
4. A return air-current of 10,000 cubic feet per minute contains explosive gas in the proportion of 1 of firedamp to 13 of air. What is the least volume of air per minute which must be added to the current to prevent its showing a "cap"?	20
5. State the provisions of the Coal Mines Regulation Act of 1887 with regard to ventilation.	20
6. What would be the per-centage of change in the volume of gases in goaves owing to a fall of the barometer from 30 to 29 inches?	20
7. Indicate on the accompanying plan how you would ventilate the workings there shown in a manner suitable for working a fiery seam.	30
8. The water-guage at the fan drift of a colliery stands at 2 inches when the quantity of air passing is found to be 150,000 cubic feet per minute. What quantity would you expect to pass with the same expenditure of ventilating power, if the water gauge rose to 2·5 inches owing to increased resistances in the air-ways?	20
Maximum marks - - -	160

No. 4. SUBJECT—PRACTICAL MINING AND GEOLOGY.

(100 *marks to qualify.*)

1. Describe the provisions of the Coal Mines Regulation Act of 1887 with regard to dangerous practices not expressly prohibited.	20
2. Draw a section of the seam, floor, and roofs, with which you are best acquainted, at any colliery, and illustrate with sketches how the seam is worked at the face.	20
3. Describe the duties of a Colliery Manager, as laid down in the Coal Mines Regulation Act of 1887.	20
4. Several shots have to be fired in a dusty and fiery mine. What precautions should be observed by the shot-firer.	20

	Number of Marks for each Question.
5. Explain the action of the Syphon, and give an example of its application to mining.	20
6. In proving a fault in a coal seam, what operations would you carry out in order to win the coal? Illustrate your answer by a sketch or sketches.	20
7. Describe the properties of anthracite, bituminous, semi-bituminous, cannel coals, and lignite.	20
8. Describe in their order the sub-divisions of the carboniferous system, and their chief characteristics in Great Britain.	20
Maximum marks - - -	160

No. 5. Subject—Colliery Plant and Machinery.

(60 *marks to qualify.*)

1. The valve motion of a non-reversing horizontal engine is found to be out of adjustment owing to the eccentric having become loose on the shaft, and to the valve having shifted in on the rod. Explain how you would proceed in order to fix the eccentric and the valve in their proper positions.	20
2. Sketch the best form of metallic piston you are acquainted with, and describe it.	20
3. Sketch a safety valve suitable for a steam boiler - - - - -	20
4. How would you guard against danger from sparks emitted from the brakes of underground hauling engines?	20
5. If the breaking strain of a wire rope is 22 tons what would be its safe working load for winding out of a colliery shaft?	20
6. What are the provisions of the Coal Mines Regulation Act of 1887 regarding the inspection of colliery machinery and appliances?	20
Maximum marks - - -	120

EXAMINATION PAPERS

FOR

UNDER MANAGERS' CERTIFICATES OF COMPETENCY. SEPTEMBER 1894.

No. 1. Subject—Arithmetic.

(60 *marks to qualify.*)

	Number of Marks for each Question.
1. A pillar of coal weighs 7 tons 16 cwt. 1 qr. 17 lbs. What is its weight in lbs.?	10
2. If an adit or heading rises 16 feet in a total length of 768 yards, what is the rise per yard?	10
3. 1 cwt. of steel hammers cost £1 7*s.* 4*d.* and they weigh 7 lbs. each. What is the cost of each hammer?	10
4. How many revolutions per minute must be made by a drum of 4 feet diameter to give a speed of 6 miles an hour to the rope?	30
5. Three men, A, B, and C, worked at the same rate of wages, and earned a total sum of £3 17*s.* 7*d.* A worked 3½ days, B worked 4½ days, C worked 6 days. How much money did each man earn?	20
6. If you pay 1*d.* per inch thick per yard forward for ripping top 6 feet wide, how much per cubic foot does the ripping cost?	20
7. A stall turns out 30 tons of coal in a week, and the deadwork is as follows:—3 sets of timber at 1*s.* 6*d.* each; 2 cogs at 11*d.* each; 3 yards of ripping top at 2*s.* 9*d.* per yard; 3 yards of cutting bottom at 9*d.* per yard; and 4 trams of rubbish at 2½*d.* per tram. How much does the deadwork cost per ton of coal?	20
Maximum marks - - -	120

No. 2. SUBJECT—VENTILATION. (60 *marks to qualify.*)	Number of Marks for each Question.
1. What quantity of air passes per minute through an air-way 6 feet high and 8 feet wide when the velocity or speed of the air current is 6½ feet per second?	20
2. Describe the barometer and explain its use - - - -	20
3. Describe a good safety-lamp for the use of colliers in fiery mines -	20
4. How would you satisfy yourself that the ventilation is adequate in a naked light mine?	20
5. What effect has carbonic acid gas, or block damp, upon mixtures of fire-damp and air?	20
6. Would you expect the air of a mine to contain most moisture in warm weather or in cold weather? State your reasons.	20
Maximum marks - - -	120

No. 3. SUBJECT—PRACTICAL MINING.

(120 *marks to qualify.*)

1. Sketch a section of a coal seam in your district, and describe the best manner of dealing with the top and bottom in the stall or waggon roads in the seam you refer to.	20
2. In working the long-wall system, what would guide you in deciding the best distance between the stall or waggon roads?	20
3. Sketch a plan showing how you would open a piece of long-wall work in maiden ground, marking the direction of dip and slips, and show by arrows how you would ventilate the workings.	20
4. If three workable seams of coal occur in water-bearing strata at equal distances apart, and within a depth of 20 yards, in what order would you work the seams, assuming the roofs to be similar in character? State your reasons.	20
5. In working a seam of coal from the outcrop to the dip, what precautions would you take as a security against being troubled with water?	20
6. If in examining a district during the working hours of a shift you found a dangerous accumulation of gas, what course would you adopt?	20
7. What are the requirements of the Coal Mines Regulation Act, 1887, with regard to the employment of youths under 16 years of age?	20
8. What is a dumb drift? - - - - - - -	20
9. Make a sketch to show the proper positions in which props should be set, and "chocks" or "cogs" should be built in working a seam in steep measures.	20
10. The per-centages of accidents from falls of roof vary considerably in different collieries, even where the seams of coal worked, the character of roof, and the mode of working are similar. How do you account for the variations?	20
Maximum marks - - -	200

I append a schedule of the fatal accidents comprised under this Act, and on page 42 a list of the fatal accidents which came under my notice but which are not comprised under the Act.

On page 9 the fatal accidents will be found summarised under the respective counties in which they occurred.

I have, &c.
JOSEPH S. MARTIN,
H.M. Inspector of Mines.

To the Right Hon. Herbert H. Asquith, Q.C., M.P.,
H.M. Principal Secretary of State,
Home Department,
Whitehall, London.

MINES CLASSED UNDER THE COAL MINES REGULATION ACT.

LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom within ONE YEAR and a DAY from the DATE of the ACCIDENT, in the SOUTH-WESTERN DISTRICT, during the Year 1894.

For Summary of Accidents under respective Counties *see* Page 9.

No. of Accident.	Date.	Hour of the Person's Shift i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous. Underground.	Lives lost. Above-ground.	Lives lost. Total.
1	1893. Nov. 27	1st	Rhymney (Rhymney Pit).	Rhymney (Monmouth.)	The Rhymney Iron Co., Limited.	Thomas Jones Crane.	24	Collier	Fall of top coal while engaged setting a prop in his working place for his own protection.	–	1	–	–	–	1
2	Dec. 19	4th	Risca	Risca (Monmouth.)	The United National Collieries, Limited.	John Goodwin	57	Collier	A fall of roof occurred in his working place, and injured his spine; it was not considered very serious at the time, but he appears to have been greatly depressed as the result of it, and on the 20th May he committed suicide. The medical evidence at the inquest clearly attributed his action to the effect of the injury.	–	1	–	–	–	1
3	1894. Jan. 4	5th	Easton	Bristol (Gloucestershire.)	Leonard Boult & Co., Limited, in liquidation.	David Webb	60	Repairer	Fall of roof in an air-way where he was engaged setting additional timber, in consequence of a "weight" having come on. He noticed that the timbers which he had set the day before were breaking, and endeavoured to strengthen them. A fall occurred and fastened him, and before he could be released the fall extended and killed him.	–	1	–	–	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
4	1891. Jan. 6	1st	Llanbradach -	Pwllypant - (Glamorganshire.)	The Cardiff Steam Coal Collieries Co., Limited.	William Ramsey -	29	Ripper -	He fell down the shaft from the "Little Rock" mouthing, when going to his work, in consequence of the arrangements at the time being insufficient for the protection of the men descending. Being Saturday afternoon, it was intended water-winding should be carried on in the shaft from a point 180 yards lower down.	–	–	1	–	–	1
5	" 8	1st	Rhymney - (New Duffryn Pit.)	Rhymney - (Glamorganshire.)	The Rhymney Iron Co., Limited.	William Morgan -	25	Collier -	Fall of roof coal from slips near the face of another man's stall, whither he went to borrow some tools. There were props set across the place 3 to 5 feet apart, and the fall occurred between these and the face.	–	1	–	–	–	1
6	" 10	10th	Pochin -	Tredegar - (Monmouth.)	The Tredegar Iron and Coal Co., Limited.	Alfred Moon -	46	Repairer -	Fall from the side of a rubbish stall, where he was unloading a tram. The stone appears to have rolled down more or less, and to have squeezed him against the side of the tram, over which he was leaning at the time. He does not seem to have thought much about it at the time, and did not report it before leaving the colliery, but on arrival home complained of pain in the bowels, which continued till his death the following evening.	–	1	–	–	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
7	1894. Jan. 11	7th	Bedwell Pit (No. 2.) -	Tredegar (Monmouth.) -	The Tredegar Iron and Coal Co. Limited.	Thomas John Lewis	13	Collier's boy	Fall of roof in working place. Edward Rees, 29, a collier, of several years' experience, being also seriously injured. The stone was released by slips and fell in the shape of an oyster shell. The place appeared upon inspection and inquiry to have been well timbered with props from 3 to 5 feet from the face of the coal.	–	1	–	–	–	1
8	„ 13	1st	South Wales -	Cwmtillery (Monmouth.) -	Lancaster's Steam Coal Collieries, Limited.	Tom Gardner -	21	Assistant timberman.	As six railway trucks were being hauled up an incline from the railway for loading, early in the morning, the fourth in some manner got off the rails. He happened to be riding on one of the buffers of this truck, and, being knocked off, he fell under the wheels, and was instantly killed. He had been engaged at this work only about three weeks.	–	–	–	–	1	1
9	„ 14	5th	Elliot - -	New Tredegar (Monmouth.) -	The Powell Duffryn Steam Coal Co. Limited.	Charles England -	34	Engineman	He attended a pumping engine situated in an off-set from the side of the West Elliot Shaft, 130 yards from the bottom. In consequence of the breakage of the condenser's motion bar, an escape of steam into the engine-room occurred, which caused his death.	–	–	–	1	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost.					
										Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
10	1894. Jan. 19	8th	Waun Llwyd	Ebbw Vale - (Monmouthshire.)	The Ebbw Vale Steel, Iron, and Coal Co., Limited.	Evan Adams - -	13	Collier's boy	Fall of roof at the face of his working place in the "Big Vein." The stone, which was 4¾ feet long, 2½ feet wide, and 9 inches thick at one side, and feather edge at the other, was released from slips by "a weight." There were, it seems, several props set across the face, but they were not close enough to catch this stone. I hope closer timbering will result after this, and that the officials will see to its being done. There were two qualified colliers working in the place with him.	–	1	–	–	–	1
11	" 25	2nd	Radstock - (Tyning Pit.)	Radstock - (Somerset.)	The Trustees of Frances, late Countess of Waldegrave.	James Wilkins -	55	Collier -	Fall of roof from slips on three sides and a joint on the fourth at the face of his working place. At the time the accident occurred, he, an old experienced collier, was engaged setting timber under it. There was plenty of timber at hand for setting previously. He and his comrades were at fault in not having set more timber, considering the faulty nature of the roof in the place. The examiner does not appear to have acted with intelligence in regard to the place that morning, and if the examination during the shift was made the day	–	1	–	–	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
	1894.								before by the bailiff, as I believe is the practice, he, too, appears to have failed in his duty.						
12	Jan. 25	3rd	Ebbw Vale (No. 6 Pit.)	Ebbw Vale (Monmouth.)	The Ebbw Vale Steel, Iron, and Coal Co., Limited.	John Strickland	25	Collier	Fall of roof at the face of his working place in the Bydelog seam. The stone (measuring about 3 feet on two adjoining sides and 6 feet on the other two, by about 13½ inches thick) dropped down in one solid block upon him. It discharged two or three props which were under it. There were props set across the face from 3 to 3½ feet apart as usual in these workings, although the roof is a strong bastard rock.	–	1	–	–	–	1
13	Feb. 2	1st	Blaina (No. 3 Griffin Pit.)	Blaina (Monmouth.)	John Lancaster and Co., Limited.	William Griffiths	38	Collier	Fall of roof at the face of the West Level in the "Old Coal." It appears from his own statement that he had fetched his heavy mandril, and was just commencing to get the stone down, when it fell and injured him. He was a collier from boyhood, and worked several years for this firm.	–	1	–	–	–	1
14	" 13	2nd	Tillery (Pennybont sidings.)	Abertillery (Monmouth.)	Powell's Tillery Steam Coal Co., Limited.	Albert Hunt	33	Shunter	Crushed between the buffers of railway trucks on the colliery sidings, near the point where the road crosses on the Cwmtillery side of the colliery.	–	–	–	–	1	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
15	1894. Feb. 15	6th	Celynen	Abercarn (Monmouth.)	The Newport Abercarn Black Vein Steam Coal Co., Limited.	George Lewis	21	Collier	A fall of roof (about 3 or 4 cwt.) as he was stooping over the end of a tram in the stall road, near the face of his working place in the "Black Vein." It occurred from a semi-circular joint or slip, in consequence of the "roof weighting." The place was secured with props and cogs at the sides, but not with double timbers, which would probably have prevented the accident. He had been working three months for the contractor, had worked previously at this colliery, and had also worked at the Albion Colliery, Pontypridd.	–	1	–	–	–	1
16	" 9	8th	Tir-pentwys	Pontypool	The Tir-pentwys Black Vein Steam Coal Company, Limited.	Joseph Foxwell	26	Collier	Run over by trams in the Tillery workings. He and another collier were engaged taking a skip of coal off a pillar at the side of a road, down which a haulier was taking a load of trams. The latter alleges that deceased, in reply to him before he started down this part of the road, stated that they were all clear. Had he been up in his working face he would have been clear; on the other side of the rails there was 3 feet space at the side of the rail, and 11 feet lower down there	–	–	–	1	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
	1894.								was a stall road off the heading, into which he might have gone out of the way.						
17	Feb. 26	9th	Risca - -	Risca - - (Monmouth.)	The United National Collieries, Limited.	Thomas Smith - John Hufton -	22 17	Collier - " -	Fall of roof at the face of their working place in the 5 ft. seam. It appears that at the end of their shift they considered it necessary, in order to leave the place safe, to set additional timber, as it showed signs of weighting. It was while engaged setting this timber the fall occurred which caused their deaths. They appear to have worked 4 months at this colliery, and previously in Rhondda Valley and Durham Collieries.	–	2	–	–	–	2
18	" 27	3rd	Celynen -	Abercarn - (Monmouth.)	The Newport Abercarn Black Vein Steam Coal Co., Limited.	Chas. A. Moss -	13	Door boy -	Run over by full trams, which he was assisting a haulier in bringing down a heading in the Black Vein. The boy was in front of the horse, and his foot appears to have got fastened in a crossing, and before he could get it free three out of four trams passed over his leg, from the effects of which he died the same day. It appears to me that this practice of allowing door boys to travel with hauliers is one which should not be allowed, as it frequently	–	–	–	1	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
	1894.								results in accidents. I have called attention to it at this colliery before, and likewise at others. If more than one person is needed, I hope adults will be employed instead of boys.						
19	Mar. 14	5th	North Blaina -	Blaina - - (Monmouth.)	J. & W. Stone - -	Frank Marshall -	29	Collier -	Fall of roof coal (3′ × 2′ × 1′ 10″) near the face of his working place. He was endeavouring to get it down, and having failed with a pinch bar, he went under it to get a wedge, and as he was returning the fall occurred and killed him.	–	1	–	–	–	1
20	„ 17	3rd	New Tredegar	New Tredegar - (Monmouth.)	The Powell Duffryn Steam Coal Co., Limited.	James Davies -	40	Surface Labourer.	While riding on a set of empty trams, which was being run down an incline from the level of the pit bank to the timber yard, they got off the rails. He was thrown off and crushed by the trams, which resulted in his death. Riding here is alleged to have been prohibited, but the order does not seem to have been enforced by the surface foreman.	–	–	–	–	1	1
21	„ 29	3rd	Blaenavon - (Big Pit.)	Blaenavon - (Monmouth.)	The Blaenavon Co., Limited.	John Williams -	29	Door "boy"	Fall of roof as he was passing along a roadway. There were two old pairs of timber under the fall, which appear to have been discharged or knocked out by it.	–	1	–	–	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
22	1894. April 7	10th	Celynen -	Abercarn - - (Monmouth.)	The Newport Abercarn Black Vein Steam Coal Co., Limited.	Daniel Evans -	21	Haulier -	Fall of side in a stall where there had been a crush. He was following the horse and full tram, when a quarter to half a tram full of clod and crushed coal fell from the side, knocked him down, and injured his back, causing death within half an hour. He had been a haulier for some years, and had also worked as a collier. By increased use of timber and vigilance on the part of the examiner or fireman this accident might probably have been provided against.	–	1	–	–	–	1
23	" 13	7th	Darran -	Bargoed - (Glamorgan.)	The Rhymney Iron Co., Limited.	John Evans -	58	Collier -	Fall of top or "bash" coal only 2 or 3 inches thick where he was working out a pillar. He died from shock, apparently resulting more from the "start" or fright which he got than from actual injuries received. His constitution and health for some time past had been very indifferent. He had been a collier from boyhood.	–	1	–	–	–	1
24	Apr. 24	8th	Varteg Hill -	Varteg - (Monmouth.)	John Vipond and Co., Limited.	George Alvis -	56	Surface foreman.	Having coupled three trucks together on the pit timber siding for a horse to pull out, he stood on a pile of timber at the side, and in reaching forward to raise a brake he fell in front of the	–	–	–	–	1	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
	1894.								wheels, which passing over him, caused immediate death. He had been foreman for six or seven years.						
25	May 3	2nd	Pochin	Tredegar (Monmouth.)	The Tredegar Iron and Coal Co., Limited.	William Williams	27	Collier, but acting haulier.	He was an experienced haulier, it seems, and acted as such when required. He forgot that at a certain point on the road there were some low timbers, and when riding out on the horse chain his head was crushed between the loaded tram and these timbers. These injuries resulted in his death.	–	–	–	1	–	1
26	,, 3	7th	South Wales (Rose Heyworth Pit.)	Abertillery (Monmouth.)	Lancaster's Steam Coal Co., Limited.	William Jones	50	Labourer	When unloading a railway truck with pit wood he appears to have received a strain, which, owing to his having suffered previously, resulted in strangulated hernia, causing death. He does not appear to have complained seriously at the time, nor to have received medical aid before reaching home.	–	–	–	–	1	1
27	,, 8	9th	Easton	Bristol (Gloucester.)	Leonard Boult and Co., Limited, in liquidation.	William Bird	61	Pumping engineman underground.	Crushed under the roof while riding up the engine plane against rules.	–	–	–	1	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accidents.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total
28	1894. May 12	5th	Waun Llwyd -	Ebbw Vale - (Monmouth.)	The Ebbw Vale Steel, Iron, and Coal Co., Limited.	Samuel Tippins -	66	Repairer -	He tripped over the hauling rope while engaged cleaning the road. He injured his elbow slightly, but continued his work. An abscess, it appears, formed subsequently, which resulted in death. Nothing was known of the case at the colliery, as he had not reported it, and his absence was taken no notice of in consequence of his having previously lost a great deal of time owing to ill health.	–	–	–	1	–	1
29	May 25	9th	Ebbw Vale - (No. 15 Pit.)	Ebbw Vale - (Monmouth.)	The Ebbw Vale Steel, Iron, and Coal Co., Limited.	Thomas Jones -	45	Coal loader -	While engaged on a truck at the screens another truck bumped it and caused him to fall down to the ground in front of the wheels, which passed over him. The truck, a foreign one, which caused the accident had a brake on one wheel only, which was not enough in the gradient of 1 in 80 at this point. He had been engaged about the Ebbw Vale Works for upwards of 30 years.	–	–	–	–	1	1
30	" 28	6th	California -	Oldland Common, Bristol. (Gloucester.)	The Oldland Colliery Co., Limited.	William Gibbs -	33	Horse driver	Having lashed his horse as he was taking a truck of coal from under the screens, it started off at a good speed, and in attempting to reach the brake he appears to have stumbled and fallen in front of the wheels, which went over both his legs and caused his death.	–	–	–	–	1	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
31	1894. June 21	4th	Blaenavon - (Dodd's Slope.)	Blaenavon - (Monmouth.)	The Blaenavon Co., Limited.	Thomas Davies -	62	Collier -	Fall of roof from slips at the face of his working place.	–	1	–	–	–	1
32	" 28	5th	Graig Fawr -	Ebbw Vale - (Monmouth.)	The Ebbw Vale Steel, Iron, and Coal Co., Limited.	William Perry -	22	Collier -	Fall of roof at the face of his working place. The coal is only about 2 feet thick, and so far as could be judged afterwards the place had been fairly well timbered.	–	1	–	–	–	1
33	July 11	8th	New Tredegar	New Tredegar - (Monmouth.)	The Powell Duffryn Steam Coal Co., Limited.	William Davies -	23	Hitcher -	While engaged at the bottom of the shaft with a full tram, the cage was drawn up, and he was crushed against the guides, &c., and fell several yards down the shaft. There seems to have been some bungling about the signals to the engineman.	–	–	1	–	–	1
34	Aug. 11	10th	Blaina - (Griffen No. 2 Pit.)	Blaina - - (Monmouth.)	John Lancaster and Co., Limited.	John George Jones	13	Door boy -	Crushed between a full train and the side of the road about 50 yards from the door, which he was attending to. The reason he went there could not be ascertained, the hauliers denying all knowledge of his leaving the door.	–	–	–	1	–	1
35	" 20	8th	Cwmsychan - (No. 1 Pit.)	Abersychan - (Monmouth.)	Abersychan Elled Steam and House Coal Co. (Hoskins and Llewelyn).	John Avis - -	60	Collier -	Crushed or run over by an empty journey of trams on the engine plane, while on his way out to the shaft at the end of his day's work.	–	–	–	1	–	1

List of Fatal Coal Mine Accidents—*continued*

No. of Accident.	Date.	Hour of the Person's Shift, *i.e.*, No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Roof and Sides.	In Shafts.	Miscellaneous Underground.	Above-ground.	Total.
36	1894. Aug. 23	5th	South Wales - (Rose Heyworth.)	Cwmtillery - (Monmouth.)	Lancaster's Steam Coal Collieries, Limited.	Thomas Macnamara	18	Haulier -	Run over by two full trams on a siding which was on an incline. He was bringing them down to where his horse stood, and failed to get the sprags into the wheels. In attempting then to stop them he in some way got under them.	–	–	–	1	–	1
37	„ 30	1st	Whitworth -	Tredegar - - (Monmouth.)	The Tredegar Iron and Coal Co., Limited.	Elizabeth James -	18	Coal loader	Run over on the branch line near the coke ovens while on her way to work in the morning. An engine was pushing an empty colliers carriage in front, and it appears to have impeded the outlook.	–	–	–	–	1	1
38	Sept. 10	6th	Victoria - (No. 1 Pit.)	Ebbw Vale - (Monmouth.)	The Ebbw Vale Steel, Iron, and Coal Co., Limited.	Charles Hart -	22	Collier -	Fall of roof close to the face of his working place. The stone, about 22 inches thick, was released by slips on three sides and broke off on the fourth side. It weighed about 30 cwt. There were several props set in the place, but there should have been one just where this stone fell, as there was a distance of from 8 to 9 feet between the props at this point.	–	1	–	–	–	1
39	Oct. 4	4th	Pochin -	Tredegar - - (Monmouth.)	The Tredegar Iron and Coal Co., Limited.	Thomas Lloyd -	50	Airwayman or repairer.	Engaged with another man in an air-road, he considered a piece of the roof unsafe, and commenced to pull it down. The stone ripped further back than he ex-	–	1	–	–	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost. Explosions of Firedamp.	Lives lost. Falls of Roof and Sides.	Lives lost. In Shafts.	Lives lost. Miscellaneous Underground.	Lives lost. Above-ground.	Lives lost. Total.
	1894.								pected and part of it fell upon him, causing injuries from which he died on the 6th. He had worked many years in collieries and for upwards of four in this pit. A pure error of judgment.						
40	Oct. 6	2nd	Blaina - (Griffin No. 1.)	Blaina - - (Monmouth.)	John Lancaster and Co., Limited.	James Flower -	13	Door boy -	While engaged opening the door on an engine plane which he was in charge of, the gang struck it, carried it away, and killed him. The boy seems too young and weak to have been put at the place. An almost similar accident occurred about two years previously in one of this company's pits. Doors should not, and need not, be put in engine planes.	–	–	–	1	–	1
41	" 16	9th	Ebbw Vale - (No. 22 Pit.)	Ebbw Vale - (Monmouth.)	The Ebbw Vale Steel, Iron, and Coal Co., Limited.	John Jones - -	12	Collier's boy	He and his collier having got a few yards up the stall road on their way to the face, heard the haulier call to them to stand clear as the tram he was fetching with his horse had got out of control. The collier returned to the heading, but the boy got on to the side, where he thought he was clear, in which he proved to be wrong, and was fatally injured.	–	–	–	1	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost: Explosions of Firedamp.	Lives lost: Falls of Roof and Sides.	Lives lost: In Shafts.	Lives lost: Miscellaneous Underground.	Lives lost: Above-ground.	Lives lost: Total.
42	1894. Oct. 31	3rd	Speech House	Forest of Dean (Gloucestershire.)	The Speech House Colliery Co., Limited.	Thomas Jenkins	18	Hod boy or putter.	While working with his father and another man, and in the act of holing in a reclining position, a very small piece of roof fell without touching him, but causing the prop ($3\frac{1}{2}$ feet long) under it to fall over. It struck the lad, but was not thought to have done him any injury. He continued at work for three or four hours, and walked home. Complaining of tenderness during the night, the place was fomented, and the doctor next day failed to notice any bruise. The lad was up and about the next couple of days, but it then proved that the bowel was injured, and peritonitis making its appearance, he died on the 10th. Apparently a pure accident.	–	1	–	–	–	1
43	Nov. 2	2nd	Welton Hill	Midsomer Norton (Somerset.)	Welton Hill Colliery Co. (Executors of the late W. B. Beauchamp.)	William James Daudo.	13	Assistant to repairers.	Fall of roof in a stall road, where two experienced men were engaged repairing, having been sent there especially to do so. A pure error of judgment on the men's part.	–	1	–	–	–	1
44	,, 27	2nd	Celynen	Abercarn (Monmouth.)	The Newport Abercarn Black Vein Steam Coal Co., Limited.	James Evans	26	Rider	While engaged clearing a small fall on engine plane, caused by trams getting off the rails and striking against the arms, a further fall	–	1	–	–	–	1

List of Fatal Coal Mine Accidents—*continued.*

No. of Accident.	Date.	Hour of the Person's Shift, i.e., No. of Hours he had been at work when the Accident happened to him.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Persons killed.	Reputed Age.	Occupation.	Cause of Accident, and Remarks.	Lives lost: Explosions of Firedamp.	Lives lost: Falls of Roof and Sides.	Lives lost: In Shafts.	Lives lost: Miscellaneous Underground.	Lives lost: Above-ground.	Lives lost: Total.
	1894.								occurred, discharging three collars and burying him, resulting in his suffocation before he could be released.						
45	Nov. 30	3rd	North Blaina -	Blaina - - (Monmouth.)	J. & W. Stone -	William Thomas -	25	Haulier -	While stooping to sprag his journey where he had taken it too far on a steep piece of the road, he stumbled and fell in front of the trams, which went over him.	–	–	–	1	–	1
46	Dec. 4	9th	Abernant -	Bargoed - (Glamorganshire.)	The Bargoed Coal Co., Limited.	Arthur Ball -	13	Collier -	His arm was crushed and fractured between trams which he was shoving up on a siding near the door (at bottom of a heading), which it was his proper work to attend to. He was, it seems, a puny little fellow, and died from shock.	–	–	–	1	–	1
47	" 14	2nd	Whitworth -	Tredegar - - (Monmouth.)	The Tredegar Iron and Coal Co., Limited.	John Cail - -	25	Collier -	While engaged wedging down some top coal in his road near the face, it fell suddenly from some unseen slips, and killed him.	–	1	–	–	–	1
48	" 14	4th	Parkfield -	Bristol - - (Gloucestershire.)	The Kingswood and Parkfield Collieries Co., Limited.	Robert Flook -	73	Packer or labourer.	A scale of roof $1\frac{1}{2}$ ft. × 2 ft. 4 in. thick on one side, thinning to a feather edge the other, fell on the back of his neck while engaged packing rubbish near the face. He died in the Bristol Infirmary two days later from exhaustion, resulting from bronchitis and delirium following the injuries, which alone would not have been sufficient to cause death had he been a healthy man.	–	1	–	–	–	1

Accidents not comprised.

The following accidents and deaths came under my notice during the year from mines under this Act, but are not comprised, having occurred to persons who were not actually engaged in mining operations at the time, and who were not in the employ of the Mine Owners, &c.

Lancaster's Steam Coal Collieries, Limited, South Wales Collery.—The death of Edwin Cooper, a collier, injured on the 24th August 1892, at the face of his working place, by a fall of coal from the face occurred on the 22nd February of this year. Death having occurred after a year and a day (a coroner's year), the case is not comprised as a fatal mines accident.

The Ebbw Vale Steel, Iron, and Coal Company, Limited.—On tramway from quarries. Joseph Evans, 25, haulier from limestone quarries, on the 18th of January, was riding on the edge of one of the empty trams or trucks which formed the load hauled by a horse, which he was driving, he fell from it in front of the wheels, which passed over him and caused such injuries that he died 13 hours afterwards. This tramway is not connected with the company's mines, and this is consequently not comprised as a mining accident.

Mr. Robert Simpson's New Regulator Colliery.—Edward Johnson Rogers, 17, died on the 18th January, from "idiopathic pericardial effusion," causing syncope. It was alleged that he met with some slight accident at the mine on the 12th, but nothing of it was reported to the manager nor to the lad's parents until the 14th, and the medical evidence showed that death was in no way connected with the effects of the accident if it had occurred.

Partridge, Jones, and Company, Limited, Havod Van Colliery, Samuel Chiddy, 64, collier, on the 29th January, was, about 6.30 a.m., proceeding down the slope from the surface with others on his way to work, and apparently in his usual health and spirits. When about 75 yards down he appears to have had a seizure of some kind, as a comrade following found him gasping on the floor, where he died immediately. The coroner's jury returned a verdict of death from natural causes. He appears for some time past to have complained of pains in the stomach and bowels.

Messrs. J. and W. Stone, North Blaina Colliery.—William John Oldham, not quite three years old, was on the 20th February fatally injured by railway trucks which were being shunted for loading purposes. This accident, like several others which come annually under this heading, is attributable to the unfenced condition of many of the branch railways in the midst of populous districts.

The highway crossing near the scene of this accident appears to me a very dangerous place, and I am surprised that the County Council allows it to continue as at present.

The Powell Duffryn Steam Coal Company, Limited, Quarry at New Tredegar.—John Jones, 70, quarryman, died on the 17th April from hemorrhage of the lungs, alleged to have been the result of a slight accident on the 19th March. As he was employed in a quarry away from the mine, the case is not comprised as a mine accident.

John Vipond and Company, Limited, Varteg Hill Colliery.—William Anslow, 59, underground labourer, on the 22nd March, died suddenly while sitting in the cabin at the pit bottom. He suffered for years from chest complaint, and had only a few days before recommenced work after some months' absence on account of his health. The coroner's jury returned a verdict of death from natural causes.

The Ebbw Vale Steel, Iron, and Coal Company, Limited, Troed-y-rhiw Clawdd Incline.—George Lane, 80, shoemaker, having got through the wire fence at the side of the incline, was so injured by some laden trams, which ran wild owing to the rope having broken, that he died the same night. This incline is on the side of the hill.

The Blaenavon Co., Limited, Kays Slope.—George Penham, 46, underground labourer, on the 29th May, died suddenly while at his work. It appears that he received a strain in this mine on the 28th March 1893 (fourteen months before) while lifting a collar, which caused spasms of the heart. He had been off work in consequence for nearly a year, but by the doctor's advice he resumed work, thinking that light occupation would be good for him. At the time of his death he was breaking a stone with a hammer, and met with no visible accident. The accident from which death is alleged to have resulted having occurred more than a year and a day (a coroner's year) before death, it is not comprised as a fatal mine accident.

The Tredegar Iron and Coal Company Limited, Ty Trist Colliery.—James Griffiths, 7, schoolboy, on the 7th June, was crushed between the rope and the terminal pulley of the endless rope haulage for hauling rubbish, &c. on the surface. It appears that he and others were amusing themselves riding on the rope, and, having held on too long, was drawn around the wheel. The place was fairly fenced off, but is in a populous vicinity, and people frequently get over the railings and on to this tramway. It appears that there were grown-up folks watching these children playing as they were on these ropes, but either did not realise

the danger or considered that it was no business of theirs, and allowed them to continue. The company must resort to frequent and consistent prosecution and additional enclosure of dangerous points in order to reduce the accidents from their many sources of danger in the neighbourhood, as other means do not seem effective. Their accidents from one cause and another are numerous.

The Coalpit Heath Coal Company, Coalpit Heath Colliery.—A child about four years of age accompanied his father with horse and cart to the colliery on the 23rd August to fetch some coal, and while the cart was being filled in the colliery yard the horse walked forward, knocked the child down, and trod on its head, causing death in a couple of hours.

The Rhymney Iron Company, Limited, Mardy Colliery.—William James Thomas, seven years of age, on the 4th September, had his head crushed between the buffers of railway trucks, which the locomotive had run out with rubbish to the tip end. The person in charge does not appear to have seen the child approach the trucks, although riding on one of them. There are frequent prosecutions for coal stealing from these tips, but apparently prosecutions for trespass will also be necessary if the law allows of them.

Partridge, Jones, and Co., Limited, Llanhilleth Colliery.—John Cornick, a collier, 22 years of age, on the night of the 29th September, died suddenly in his working place in the Black Vein from failure of the heart's action, entirely unconnected with any mining circumstances.

Henry Matthews, 70 years of age, formerly a labourer underground at Celynen Colliery, died on the 6th December from heart disease. About three years before he had had his leg broken in the mine, and had never resumed work, hence the police reported it to the coroner.

Mr. Martin's Report.

Report on the Inspection of Mines in Cornwall, Devonshire, Dorsetshire, Gloucestershire, Hampshire, Isle of Wight, Herefordshire, Somersetshire, and Wiltshire, under the Metalliferous Mines Regulation Acts, 1872 and 1875, with the Slate Mines (Gunpowder) Act, 1882, for the year ending 31st December 1894.—By Joseph S. Martin, Esq.

Sir, Durdham Park, Bristol, 15th February 1895.

In compliance with section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour as inspector in charge of the South Western District to submit to you the following report of the working of the Act in that area.

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I have been assisted in the work of the district by Mr. Bain and Mr. E. E. V. Stokes as in the previous year, but the work has been very materially added to, more especially the clerical work, in view of the Quarries Act and other instructions which have been issued from the Home Office.

The work during the past three or four months has, in addition to the willing aid rendered by my assistants, daily occupied me very long hours.

In submitting my report at this unprecedently early date I am complying with your directions, but as the statistics for the year are also only just completed, it will be evident that I have not been able to give it the satisfactory consideration I could if it had been prepared as hitherto, for the middle or end of next month, especially as I have had a run of serious accidents, which have necessitated much daily absence from home during the past 10 days.

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I am glad to be able to report a fairly satisfactory year in relation to accidents and deaths. There have been three fatal accidents and 29 deaths less than in the preceding year, the numbers being 10 fatal accidents against 13 and 10 deaths as compared with 39.

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oyed.

The number of persons employed in this class of mining continues to decrease, the total decrease being 1,153 as compared with the previous year. This decrease occurred in the following counties:—Cornwall, 954; Devonshire, 64; Gloucestershire, 100; Somersetshire, 11; and Wiltshire, 42, while in Dorsetshire there was an increase of 18.

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ning.

In my reports for 1892 and 1893, I referred to the then depressed state of tin mining in Cornwall, which was and is still the principal mining of the county. I regret to say that during the year under review that depression has not merely continued, but has reached a very acute stage and continues so.

The price of tin has fallen about 30 per cent. within two years, and has reached a figure which is absolutely unremunerative under the present conditions of Cornish mining. I believe I am not wrong in saying that there are not, at the time of writing, two dividend paying mines in the county of Cornwall.

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The Cost Book principle is now having a severe test as to its adaptability for mining purposes. It is no doubt satisfactory to Adventurers when mines are paying and they receive dividends, and even in times when things are moderately good Adventurers are not so badly off when they have interests in several mines, some of which pay and others make calls, as the one covers the other, and they live on in fond hope of coming suddenly upon great riches in one or other of their holdings. At present it is a case of paying heavy calls at each, and the result has been that several mines have ceased work and there are others working from month to month, or meeting to meeting, as Adventurers are either unwilling or unable to continue such heavy payments in the face of enormous shrinkage in the value of their property.

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The remarks in my last year's report have been proved correct only too soon. Some of the mines have recently developed an amount of energy, which, had they done 10 years ago, would have enabled them to combat more successfully with the present conditions, but, unfortunately, they have now fallen upon bad times, and I fear the developments will not be persevered with in some cases, although there is no question as to the proper course to be pursued if capital were at their disposal.

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Dolcoath Mine, with its vast riches, has fallen out of the dividend list during the past year, and the shrinkage in the value of the shares is something enormous, partially due to various underground accidents and runs of ground in the shafts and workings, but not a little to the course which they have pursued, as indicated in my last year's report, and if they still continue it I anticipate the mine taking its position on a level with its poorer neighbours.

In the interest of the district and of the Adventurers of the mine, I have made representations to the executive, and pointed out what appeared to me desirable with a view to the

matter being considered, and if possible to get the necessary and desirable steps taken to save the property remaining to the adventurers. It is almost absolutely necessary that the working of the mine should be reorganised and put on a safe and economical basis. The present shaft arrangements are such as to entail heavy expense in maintenance, if even therewith it can be safely accomplished. There is no difference of opinion as to the necessity of a good perpendicular shaft 18 to 20 ft. diameter, to be fitted up with the most recent winding as well as pumping arrangements. The trams once loaded should be brought to the point of discharge, on the surface, without being once emptied, and other labour-saving arrangements should be introduced above and below ground, so that when the present riches in depth fall off, the mine, instead of being shut up at once, may continue to be remunerative for years to come.

The fact, as I understand it, is, the Adventurers want the Mineral Owner to do the work for them, or to contribute very largely to it, and they sit down awaiting overtures instead of their going to him and saying : "Our lease has only a comparatively short time to run, and "if the mine is to be worked advantageously for you and for us an outlay of 70,000*l.* to "80,000*l.* is necessary. What are you prepared to do? Will you give us a new lease, and "will you help us to the desirable end of having a good perpendicular shaft?"

If they would only do so, and get the subject fully considered and a reasonable scheme drawn out for discussion, I feel sure they would be favourably received. It is no less the Mineral Owner's interest to have matters carried out properly as it is that of the Adventurers.

Development exertions at Agar and Carn Brea.

At Wheal Agar and Carn Brea Mines exertions are now being made with a view to quickly open up and develop the ground by means of rock drills. I sincerely wish them success, and I believe, if properly followed out and persevered with, good results must follow, but to commence, and after a few months to stop again, would be only throwing away their money. The mines need to be developed, and it should be done now out of capital, and the expenditure looked upon as such, entirely distinct from the ordinary working of the mines. It has been neglected in the past, and now they are suffering for it under the Cost Book principle. I do not desire to make comparison between Cost Book and Limited Liability, either or both are objectionable for mining unless a good reserve fund is maintained to meet the constantly varying vicissitudes of mining.

Boiler Explosions.

I am glad to be able to again record a year without a boiler explosion, thus showing the material improvement which has been brought about under this heading.

Surveying and Planning.

It is not necessary that I should here repeat the observations which I have made on this subject in my previous reports, but I say again that in my opinion sufficient attention is not given to mine plans to maintain their accuracy and completeness as they should be. In this view I am materially strengthened by the disaster which recently occurred in North Staffordshire, and by the number of cases of encroachment between adjoining mines which have come under my notice during the year, and more especially by the Wheal Grenville *v.* South Condurrow case, which occupied 13 days before the Vice-Warden of the Stannaries Court at Truro. The working plans of the two mines were made by the same Surveyors, and the trespasses are alleged to have occurred while working according to these plans. I was much surprised to find in the course of the hearing that the Surveyor, admittedly one of the most competent in the kingdom, stated in his evidence that working plans are not accurate, and that they cannot be relied upon, in explanation of which he referred to their being kept up by assistants of varying abilities. This is a matter which I referred to in my last year's report, without having any knowledge of this case; my remarks were intended to refer as much to other parts of my district, if not more so, including mines under the Coal Mines Regulation Act.

It is to be said that in some cases (and they are, I am sorry to say, only too numerous) Coal as well as Metalliferous Mine Executives consider it economy to pay as little as possible to Surveyors, with the natural result of inefficiency. For my part, I can only say that if working plans are inaccurate and unreliable they should not be so; there is no necessity for it. Efficiency may, and should be obtained by the selection of skilled Surveyors, who should be paid such remuneration as will allow of sufficient attention to enable the work to be properly done. I regret to say that at collieries as well as other mines it is too frequently looked at from the point of view that absolute accuracy is not necessary, and a person who may be engaged for a small salary is quite good enough for the work.

Sufficient value is not by any means given to the subject, in view of the risk to life which will be incurred in future years by parties working near abandoned mines full of water &c., nor even from the point of view of the value of property.

PROSECUTIONS, &c. with a VIEW to the ENFORCEMENT of the REQUIREMENTS of the ACT and the SPECIAL RULES.

By your directions I instituted proceedings, which were heard during the year, in the following cases:—

Mine.	Description of Offender.	Contravention.	Result of Trial.	Penalty.	Costs.
Wheal Grenville -	Manager -	Not enforcing the Act and Special Rules at the mine.	Conviction -	£ s. d. 2 0 0	£ s. d. 0 6 6

MAGISTERIAL PROCEEDINGS ON THE PART OF OWNERS, &c. AGAINST WORKMEN.

In the following case the executive of the mine instituted proceedings with a view of enforcing the requirements of the Act and Special Rules.

Mine.	Description of Offenders.	Contravention.	Result of Trial.	Penalty.	Costs.
Dolcoath -	Two miners -	Neglecting to take proper precautions when blasting for the safety of the persons employed in the mine.	Conviction -	5s. each	—

LIST OF APOLOGIES.

In the following case the executive of the mine accepted apologies from the offenders, which were printed and posted up at the works for several weeks:—

Mine.	Description of Offenders.	Contravention.
Blue Hills - -	Four miners -	Neglecting to take proper precautions when blasting for the safety of the persons employed in the mine.

ANNUAL RETURNS OF PERSONS EMPLOYED.

The following table summarises according to counties the returns of the number of persons employed in and about the mines of the district during the year 1894, and also enables a comparison to be made with the figures similarly given in last year's report.

It will be seen that there is a decrease of 1,153 persons, of which 723 are underground and 430 above ground.

Situation of Mines.	UNDERGROUND.				ABOVE GROUND. Including Dressers within the boundary of the Mine.							Total number of Persons employed (above ground and underground).
	MALE PERSONS.				10 to 13.		13 to 18.		Above 18.		TOTAL.	
	12 to 13.	13 to 16.	Above 16.	TOTAL.	Males.	Females.	Males.	Females.	Females.	Males.		
Cornwall - -	5	191	4,291	4,487	24	3	643	179	690	2,675	4,214	8,701
Devonshire - -	—	6	383	389	5	—	61	16	13	359	454	843
Dorsetshire - -	—	1	140	141	—	—	24	—	—	123	147	288
Gloucestershire -	—	60	163	223	—	—	3	—	—	56	59	282
Somersetshire - -	—	—	32	32	—	—	10	—	—	25	35	67
Wiltshire - -	—	34	600	634	—	—	19	—	—	105	124	758
Totals -	5	292	5,609	5,906	29	3	760	195	703	3,343	5,033	10,939
Totals in 1893 -	5	278	6,346	6,629	32	1	900	295	672	3,563	5,463	12,092

MINERAL WROUGHT.

The quantities of the respective minerals wrought during the years 1890–94 were:—

—	1890.	1891.	1892.	1893.	1894.
Antimony	—	10	6	—	—
Arsenic (powder)	4,154	6,016	5,114	5,969	4,754
Arsenic (pyrites)	5,144	5,095	4,497	2,912	3,285
Barytes	2,000	2,600	2,077	1,200	900
Clays	78,002	66,028	75,021	72,649	68,833
Copper ore	11,032	8,287	5,631	5,144	5,676
Copper precipitate	—	9	—	—	8
Fluor spar	—	22	—	—	—
Iron ore	70,402	68,824	67,277	60,242	27,749
Iron red oxide	—	—	—	—	870
Lead ore	—	80	15	—	—
Manganese ore	306	130	840	325	31
Ochre	372	346	528	1,373	51
Shining ore	—	—	—	—	230
Slates, and slabs	10,047	5,407	11,176	270	150
Stone	109,525	102,513	108,410	128,038	120,340
Tin { dressed / undressed	12,969	13,025 / 4,362 } 17,387	12,958 / 2,491 } 15,449	12,258 / 2,543 } 14,801	11,446 / 1,680 } 13,126
Uranium	21½	31	37	25	13
Wolfram	104	138	125	22	—
Zinc (Blende)	—	—	12	21	63

ACCIDENTS.

The 10 fatal accidents, with 10 deaths, recorded in the appended schedule—9 in Cornwall (in 6 mines), and 1 in Somersetshire—compare favourably with the previous year, being for the whole district at the rate of 1,093 (or ·9 per 1,000) persons employed per fatal accident and death, compared with 930 and 310 persons respectively in 1893.

The fatal accidents recorded in the schedule appended are classified under the following heads:—

Cause of Accident.	Accidents.	Deaths.
UNDERGROUND—		
Fall of Ground—which occurred in Cornwall	1	1
In Shafts: 2 Falling part way down; 1 Crushed by skip	3	3
Miscellaneous: 2 By explosives; 1 Slipped off ladder in a gunnis on his way to work; 1 A block of stone which was being drawn along the floor by a crane toppled over upon him.	4	4
ABOVE GROUND—		
Miscellaneous: 2 By machinery	2	2
Total	10	10

Falls of Ground.

There has only been one fatal accident during the year from this cause, which must be considered highly satisfactory when the circumstances of the district are all taken into account.

Shaft Accidents.

Three fatal accidents came under this heading, two being men employed in shafts at repairs slipping or over-balancing, and falling a greater or lesser distance. The third was a case in which a miner, who was on his way down the shaft by means of ladders, was killed by the skip, the ladder road not being fenced off from the skip road as required. It was alleged that the man had no right to go down by these ladders, which were there, it was

stated, solely for the shaft men examining and repairing, and that in doing so he was acting contrary to orders, &c. It was, however, clear that if such were the case there were no attempts made to enforce the orders or rules, and, consequently, proceedings were instituted by me in accordance with your instructions, against the Manager of the Mine, for having failed to take all reasonable means to enforce observance of the requirements of the Act and Special Rules, with the result that a fine of 2*l.* and 6*s.* 6*d.* costs was imposed.

By Explosives.

I regret that I am unable to speak in such pleasing terms with reference to the care and skill exercised by the men in the handling and use of explosives during this year as I was in the preceding one, two fatal and one non-fatal accidents having occurred. These accidents indicated carelessness, but what the specific acts were which caused the fatal explosions could not be definitely determined, as the survivors were unwilling or, as I believe, unable to explain them.

Fatal Accidents in Relation to Persons Employed.

The number of persons employed, the number of deaths by accident, the ratio of accidents to persons employed, and the death-rate per 1,000 for each year since the Metalliferous Mines Regulation Act came into force, are shown by the following tabular statement:—

Year.	Number of Persons employed.	Number of Deaths by Accident.	Number of Persons employed for each Death.	Number of Deaths per 1,000 Persons employed.
1873	32,326	62	521	1·918
1874	27,347	55	497	2·011
1875	24,380	53	460	2·174
1876	23,028	24	960	1·042
1877	21,795	38	574	1·743
1878	17,667	26	680	1·471
1879	15,865	18	881	1·134
1880	17,892	34	526	1·900
1881	20,161	28	720	1·388
1882	20,513	34	603	1·657
1883	18,362	40	459	2·178
1884	16,483	17	969	1·031
1885	15,633	20	781	1·279
1886	14,700	26	565	1·769
1887	14,371	17	845	1·183
1888	15,197	27	563	1·777
1889	14,817	24	617	1·619
1890	14,313	13	1,101	0·908
1891	13,317	23	579	1·659
1892	12,740	14	910	1·099
1893	12,092	39	310	3·225
1894	10,939	10	1,094	0·914
Totals for the 22 years - -	393,848	642	15,215	—

TABLE II.—FATAL ACCIDENTS AND DEATHS (No. 14 DISTRICT).

The Fatal Accidents and Deaths in the district, as at present constituted, are tabulated under their respective headings for the 10 years ending 1894 as follows:—

Cause of Accident.	Number of Fatal Accidents.										Average for 10 years.	Number of Deaths resulting therefrom.										Average for 10 years.
	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.		1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	
Falls of ground	5	2	4	6	10	3	6	4	4	1	4·5	5	2	4	7	10	3	6	4	11	1	5·3
In Shafts.																						
Overwinding	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Ropes and chains breaking	1	1	1	—	—	—	—	—	—	—	—	1	1	1	—	—	—	—	—	—	—	—
Whilst ascending or descending by machinery	2	1	2	2	2	2	2	—	—	—	—	2	1	2	2	2	2	2	—	—	—	—
Falling into shaft from surface	1	—	—	1	—	—	—	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—
Things falling from surface	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Falling from part way down	2	3	1	4	4	2	5	—	2	1	—	2	3	1	4	4	2	5	—	2	1	—
Things falling from part way down	—	1	—	2	—	1	1	—	1	—	—	—	1	—	2	—	1	1	—	1	—	—
Miscellaneous in shafts	—	2	2	—	2	—	1	—	3	2	—	—	2	2	—	2	—	1	—	3	2	—
Totals in shafts	6	8	7	10	8	5	9	—	6	3	6·2	6	8	7	10	8	5	9	—	6	3	6·2
Miscellaneous Underground.																						
Explosions of gunpowder and other explosives	2	4	2	4	4	1	—	1	—	2	—	3	5	2	4	4	1	—	1	—	2	—
Suffocation by gases	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Irruptions of water	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	2	—	20	—	—
Falling into water	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
On inclined planes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By trams and tubs	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
By machinery underground	1	—	1	1	—	—	—	—	—	—	—	1	—	1	1	—	—	—	—	—	—	—
Sundries underground	4	6	2	2	—	1	2	5	1	2	—	4	6	2	2	—	1	2	5	1	2	—
Totals miscellaneous underground	7	11	5	7	4	2	3	7	2	4	5·2	8	12	5	7	4	2	4	7	21	4	7·4
On Surface.																						
By machinery	—	2	—	—	—	—	1	1	—	2	—	—	2	—	—	—	—	1	1	—	2	—
Boilers bursting	1	1	—	—	—	1	—	1	—	—	—	1	1	—	—	—	3	—	1	—	—	—
Miscellaneous	—	1	1	3	2	—	2	1	1	—	—	—	1	1	3	2	—	3	1	1	—	—
Totals on surface	1	4	1	3	2	1	3	3	1	2	2·1	1	4	1	3	2	3	4	3	1	2	2·4
Gross totals	19	25	17	26	24	11	21	14	13	10	18·0	20	26	17	27	24	13	23	14	39	10	21·3

The schedules of fatal and non-fatal accidents which occurred during the year, as reported to me, are appended.

I have, &c.
(Signed) JOSEPH S. MARTIN.

To the Right Hon. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Department, Whitehall, London, S.W.

Fatal Accidents.

METALLIFEROUS MINES REGULATION ACT.

A LIST of the FATAL ACCIDENTS, and DEATHS (arising therefrom within one year and a day from the date of the Accident), which occurred in and about the Mines of the SOUTH-WESTERN METALLIFEROUS MINING DISTRICT during the Year 1894.

No. of Accidents.	Date.	Hour of Shift when Accident happened.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Reputed Age.	Occupation.	Cause of Death, and Remarks.	Lives lost.				
										Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above-ground.
1	1894. Jan. 24	2nd	Botallack -	St. Just - (Cornwall.)	The Botallack Mine Adventurers.	James Ellis -	30	Labourer	In order to ascertain the cause of defect in an improvised boiler feed pump, which he and others were working by hand, he loosened one of the valve covers, whereupon steam and hot water flew out and scalded him so severely that he died from the effects on the 4th February.	–	–	–	–	1
2	Jan. 24	4th	Tincroft -	Illogan - (Cornwall.)	The Tincroft Mine Adventurers.	James Bennett Pryor	26	Assistant timberman.	He fell about 20 fathoms in the shaft, having apparently overbalanced himself while engaged casing off the drawing shaft from the footway. Improved methods for working in the shafts appear to me desirable in many of the Cornish mines.	–	–	1	–	–
3	Mar. 13	5th	Dolcoath -	Camborne - (Cornwall.)	The Dolcoath Mine Adventurers.	John Richards -	42	Miner -	He returned to a shot which he found had only partially done its work, and asked for the dynamite canister and a detonator. Shortly after these were handed to him an explosion occurred, which blew deceased four fathoms away, and slightly injured his son, John Richards, junr. It would appear as though he was re-charging the hole.	–	–	–	1	–

List of Fatal Accidents, &c.—*continued.*

No. of Accident.	Date.	Hour of Shift when Accident happened.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Reputed Age.	Occupation.	Cause of Death, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above-ground.
4	1894. Apr. 7	1st	Grenville -	Camborne - (Cornwall).	The Wheal Grenville Adventurers.	Thomas Simms -	35	Miner -	Crushed by the gig while descending Peak's Shaft by ladder. These ladders the manager asserted were only for the use of the pitmen in examining and repairing the shaft. He alleged that others were prohibited from using them, but whether this was or was not the case, it was not enforced, and the manager was fined by the magistrates 2*l.* and costs for not doing so. (*See* page .)	–	–	1	–	–
5	June 5	5th	Carn Brea -	Illogan - (Cornwall.)	The Carn Brea Mine Adventurers.	William Condon -	21	Miner -	Fall of ground. A rock about $1\frac{1}{2}$ to 2 tons weight fell from the lip of a stope on the back of the 197 fathom level, and fell into the underhand stope below this level. Rolling down this stope it killed deceased, and injured another man (Michael Trevena).	–	1	–	–	–
6	July 2	4th	Dolcoath	Camborne - (Cornwall.)	The Dolcoath Mine Adventurers.	John Hancock -	31	Timber-man.	While engaged about the pumps in the shaft he apparently slipped, and fell 3 or 4 fathoms to where he was found. Men 24 fathoms above him were engaged lowering some iron bucket rods, and allowed them to slip through the chain lashing; the noise of these rods falling inside the pumps no doubt brought about the accident to him.	–	–	1	–	–
7	„ 18	4th	Carn Brea -	Illogan - (Cornwall.)	The Carn Brea Mine Adventurers.	William Jory -	19	Miner -	Explosion of gelignite where the shaft men (sinkers) kept their explosives, food, &c. Deceased and Richard Thomas (who was also injured) were skip fillers at this place. They were,	–	–	–	1	–

List of Fatal Accidents &c.—*continued.*

No. of Accident.	Date.	Hour of Shift when Accident happened.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons killed.	Reputed Age.	Occupation.	Cause of Death, and Remarks.	Lives lost. Explosions of Firedamp.	Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above-ground.
	1894.								Thomas states, having their "croust" or food at the time, and saw no gelignite about the place. They apparently must have been interfering with the gelignite, &c.					
8	Aug. 11	4th	Levant -	St. Just - (Cornwall.)	The Levant Mine Adventurers.	John Hitchins -	66	Labourer	He was crushed between the arms of a water-wheel and the frame in which the wheel worked. The accident was due to the steam valve of an auxiliary engine not being in an efficient state of repair.	–	–	–	–	1
9	" 14	2nd	Dolcoath -	Camborne - (Cornwall.)	The Dolcoath Mine Adventurers.	William Treloar -	16	Tributer's lad.	When descending by ladder in a gunnis in order to get to his place of work below the 266 fathom level, or while climbing back from the ladder in the gunnis, he seems to have lost his balance, and fallen 7 or 8 fathoms on to the sollar over the level below, where he was found. The ladders upon inspection seemed in good order.	–	–	–	1	–
10	Oct. 27	7th	Limpley Stoke-	Limpley Stoke (Somerset.)	Northey Stone Co. -	Willliam Nash -	40	Under-ground quarry-man.	A block of stone 5 ft. high, 4 ft. long, and 2 ft. wide, which was being drawn forward by a crane, toppled over, and jammed deceased against the pillars for supporting the roof, and caused instant death. He was voluntarily assisting at the stone, his own work being "clearing," about 9 feet away.	–	–	–	1	–
									Total lives lost -	—	1	3	4	2
									Total fatal accidents - -	—	1	3	4	2

Non-fatal Accidents.

METALLIFEROUS MINES REGULATION ACT, 1872.

LIST OF NON-FATAL ACCIDENTS causing serious personal injury in the South-Western District during the Year 1894.

No. of Accident.	Date.	Hour of Shift when Accident happened.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons injured.	Reputed Age.	Occupation.	Remarks.	Persons injured. Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above-ground.
						CORNWALL.							
1	1894. Jan. 24	5th	Tincroft - -	Illogan - -	The Tincroft Mine Adventurers.	John Menhenneth -	22	Assistant timberman.	The skip having struck him, he fell 3 or 4 fathoms in the shaft.	1	–	–	–
2	„ 26	7th	Dolcoath - -	Camborne -	The Dolcoath Mine Adventurers.	James Langdon -	18	Miner -	Struck by débris from a shot which was fired without proper warning having been given.	–	–	1	–
3	„ 30	5th	Phœnix United -	Liskeard - -	The Phœnix United Mining Co.	William John Hodge	17	Ditto -	Fall of ground - - - -	1	–	–	–
4	Feb. 7	4th	Tincroft - -	Illogan - -	The Tincroft Mine Adventurers.	William Wearns - Richard Goldsworthy James Walters -	18 19 19	Ditto - Ditto - Ditto -	Fall of ground. Alleged to be from an "Air Blast," *i.e.*, the ground being apparently in a state of tension, a portion flew off suddenly in pieces and injured them.	3	–	–	–
5	„ 14	4th	East Blue Hills -	St. Agnes -	The East Blue Hills Mine Adventurers.	Sydney Gould -	20	Ditto -	Stones blown into his place from a shot drilled at the other side of a piece of ground. There was carelessness connected with this accident.	–	–	1	–
6	„ 17	3rd	Levant - -	St. Just - -	The Levant Mine Adventurers.	William Henry Nicholas.	30	Ditto -	Fall of ground - - - -	1	–	–	–
7	Mar. 3	7th	West Kitty - -	St. Agnes -	The West Kitty Mine Adventurers.	John Whitford -	58	Pitman -	While engaged about the pumps, he overbalanced and fell 10 or 12 feet in the shaft.	–	1	–	–

List of Non-fatal Accidents, &c.—*continued.*

No. of Accident.	Date.	Hour of Shift when Accident happened.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons injured.	Reputed Age.	Occupation.	Remarks.	Persons injured. Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above-ground.
8	1894. Mar. 31	5th	Phœnix United -	Linkinhorne -	The Phœnix United Mining Co.	Charles Jole -	25	Skip filler	Leg crushed by the skip - - -	–	1	–	–
9	Apr. 6	4th	Levant - -	St. Just - -	The Levant Mine Adventurers.	John Daniel -	50	Labourer	Crushed between two traction waggons on surface.	–	–	–	1
10	" 10	5th	Danescombe Valley	Calstock -	Hughes and Sowden	William Pillow -	28	Trammer	Fingers crushed between two rocks -	–	–	1	–
11	" 16	4th	Carn Brea - -	Illogan - -	The Carn Brea Mine Adventurers.	John Sprague -	20	Shaftman	Hand crushed while oiling the bearing of a balance "bob."	–	1	–	–
12	" 16	1st	Botallack - -	St. Just -	The Botallack Mine Adventurers.	Peter H. Hearne -	50	Miner -	While descending the shaft he incautiously let his arm protrude outside the cage, resulting in its being fractured.	–	1	–	–
13	" 19	4th	South Frances United	Illogan - -	The South Wheal Frances Adventurers.	John Treloar - -	28	Ditto -	While signalling to the surface, by means of a lever connected to a knocker, the pin of the lever broke, causing him to fall.	–	–	1	–
14	" 26	5th	Dolcoath - -	Camborne -	The Dolcoath Mine Adventurers.	Henry Wey - -	22	Ditto -	Fall of ground - - - -	1	–	–	–
15	May 2	4th	Carn Brea - -	Illogan - -	The Carn Brea Mine Adventurers.	William H. Curnow -	45	Engineman	While examining the feed pump his hand was crushed by the plunger.	–	–	–	1
16	" 3	5th	Botallack - -	St. Just - -	The Botallack Mine Adventurers.	John James - -	50	Miner -	A loose stone which had apparently lodged on a collar or a cross-piece fell and cut his head.	–	–	1	–
17	June 14	2nd	Wheal Agar - -	Illogan - -	The Wheal Agar Adventurers.	James Stevens -	17	Ditto -	Foot slipped in a stope, and he fell 4 to 5 fathoms.	–	–	1	–

List of Non-fatal Accidents, &c.—*continued.*

No. of Accident.	Date.	Hour of Shift when Accident happened.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons injured.	Reputed Age.	Occupation.	Remarks.	Persons injured: Falls of Ground.	Persons injured: In Shafts.	Persons injured: Miscellaneous Underground.	Persons injured: Above-ground.
18	1893. June 30	3rd	Carn Brea - -	Illogan - -	The Carn Brea Mine Adventurers.	Henry Blight - -	22	Miner -	Piece of ground, which he was levering down after blasting, fell suddenly.	1	–	–	–
19	July 20	6th	Carn Brea - -	Ditto -	Ditto - -	Tristan James -	18	Ditto -	Fell when climbing down a stope with a chain.	–	–	1	–
20	" 20	6th	South Wheal Crofty	Ditto -	The South Wheal Crofty Adventurers.	Thomas Sherman -	36	Ditto -	Fell from ladder while repairing in the shaft.	–	1	–	–
21	" 26	3rd	Killefreth - -	Scorrier - -	The Killefreth Mine Adventurers.	William Jones - -	18	Ditto -	Fall of ground from side of level -	1	–	–	–
22	Aug. 3	1st	South Wheal Crofty	Illogan - -	The South Wheal Crofty Adventurers.	John Stanaway -	35	Ditto -	Collar bone fractured by a board which fell from the stope above.	–	–	1	–
23	" 12	7th	South Condurrow -	Camborne -	The South Condurrow Mine Adventurers.	Richard Toy - -	55	Ditto -	Fall of ground from the corner of his place while returning after blasting.	1	–	–	–
24	" 24	7th	Tincroft - -	Illogan - -	The Tincroft Mine Adventurers.	Bennett Orchard -	35	Shaftman	Fell from ladders - - -	–	1	–	–
25	Sept. 3	1st	Wheal Agar -	Ditto -	The Wheal Agar Adventurers.	Thomas Rogers -	21	Miner -	Thumb crushed in cogwheel of an air-winch, due to thoughtlessness on his own part.	–	–	1	–
26	Oct. 17	1st	Polberro - -	St. Agnes -	The Polberro Mine Adventurers.	John Pryor - -	38	Shaftman	Piece of timber fell and injured him while working in shaft.	–	1	–	–
27	" 23	2nd	South Wheal Frances United.	Redruth - -	The South Wheal Frances United Adventurers.	William James Nile -	24	Miner -	Fall of ground in his working place -	1	–	–	–

List of Non-fatal Accidents, &c.—*continued.*

No. of Accident.	Date.	Hour of Shift when Accident happened.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons injured.	Reputed Age.	Occupation.	Remarks.	Persons injured. Falls of Ground.	In Shafts.	Miscellaneous Underground.	Above-ground.
28	1894. Oct. 25	4th	Dolcoath	Camborne	The Dolcoath Mine Adventurers.	John Warren	21	Stoper	The rope with which he and others were hauling a heavy baulk of timber up into a stope slipped, and caused him to fall away 4 or 5 fathoms.	–	–	1	–
29	Nov. 5	2nd	East Pool	Illogan	The East Pool Mining Co.	Thomas Trengrove	18	Miner	A scale from the breast fell and injured his left hand.	1	–	–	–
30	„ 5	6th	Carn Brea	Ditto	The Carn Brea Mine Adventurers.	John Bennett	22	Timberman	A fall of ground from the face while assisting to set timber.	1	–	–	–
31	„ 8	8th	Phœnix United	Linkinhorne	The Phœnix United Adventurers.	Robert Bethell	46	Miner	The screw jack with which the balance box on the surface was being raised, in order to connect it with the pump rod, slipped and flew against him.	–	–	–	1
32	„ 19	7th	Cook's Kitchen	Illogan, Redruth	The Cook's Kitchen Mining Co.	J. Carey	22	Mining student.	He was sitting down eating his "crib," when a stone fell from the hanging wall.	1	–	–	–
33	„ 20	4th	Phœnix United	Linkinhorne	The Phœnix United Adventurers.	William Henry Bennett	37	Miner	Fall of soft granite from the hanging wall in a stope in the back of the 40 fathom level.	1	–	–	–
						DEVONSHIRE.							
34	July 13	2nd	Wheal Crebor	Tavistock	The Wheal Crebor Co.	R. Ninies	45	Miner	Handle of a crab winch struck him on the head.	–	–	–	1
35	Dec. 10	–	Gawton	Gawton Quay, Tavistock.	The Gawton Mining Co., Limited.	George Rowe	–	Agent	He was sitting down in a stope, booking his measurements, when a piece of ground came away a few feet above him and injured his shoulder and leg.	1	–	–	–

List of Non-fatal Accidents, &c.—*continued.*

No. of Accident.	Date.	Hour of Shift when Accident happened.	Name of Mine.	Where situate.	Owner's or Company's Name.	Persons injured.	Reputed Age.	Occupation.	Remarks.	Persons injured. Falls of Ground.	Persons injured. In Shafts.	Persons injured. Miscellaneous Underground.	Persons injured. Above-ground.
	1894.												
					GLOUCESTERSHIRE (FOREST OF DEAN DIVISION).								
36	June 27	5th	Buckshaft - -	Cinderford - (Gloucestershire.)	H. Crawshay & Co., Limited.	Joseph Luzler -	30	Miner -	In sliding down one of the holes or winzes on a ladder about 10 feet long, from where he was working in a pocket of iron ore, he bungled and fell some feet, receiving a slight scalp wound.	–	–	1	–
37	Sept. 3	6th	Buckshaft - -	Ditto - -	Ditto - -	William Alding -	52	Ditto -	Fall of ground while engaged setting timber. He was an experienced man.	1	–	–	–
38	Oct. 27	9th	Shakemantle - -	Ditto -	Ditto - -	William Wright -	46	Engineman	Whilst tapping a boiler for cleaning, he slipped and injured his knee.	–	–	–	1
						WILTSHIRE.							
39	Jan. 17	7th	Sandstone - -	Corsham - -	The Corsham Quarrying Co.	Joseph Sheppard -	54	Miner -	A stone slipped from his hands and injured his foot.	–	–	1	–
40	July 10	10th	Limpley Stoke -	Limpley Stoke -	The Bath Stone Firms, Limited.	Edward Smith -	–	Foreman	Fall of ground - - - -	1	–	–	–
41	Aug. 30	2nd	Lower Boxhill Stone	Box - -	Ditto - -	William Phelps -	39	Stone miner or quarryman.	Sling chain slipped when lifting a stone, and end struck his thigh.	–	–	1	–
									Total persons injured - -	19	8	13	5
									Total separate accidents -	15	8	13	5

Fatal Accidents not comprised.

The following fatalities came under my notice, but which are not comprised under the Act :—

Ellen Vincent, 25 years of age, employed on the 6th January at the Wheal Agar dressing floors (separated from the mine half to three-quarters of a mile), had her neck dislocated in consequence of a woollen muffler which she wore becoming entangled in a revolving shaft. From 1st January 1895 these dressing floors will be under my inspection.

Edward Pritchard, a quarryman, was fatally injured on the 26th February by a fall of over-burden or soil, while engaged in an open work, adjoining the Wilderness Clay Mine, belonging to Messrs. Colchester Wemyss, & Co., Limited. This will also, in future, come under my inspection.

Reports of Assisting Inspectors.

85, Pembroke Road, Clifton, Bristol,
Feb. 15, 1895.

SIR,

In pursuance of section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report to you that during the past year I have exercised the duties of an Inspector of Mines in the South-Western District, and that in so doing I have acted as assistant to and under the direction of the Inspector in charge of that district.

I am,
Sir,
Your obedient Servant,
R. DONALD BAIN.

The Right Hon. the Secretary of State,
Home Office, Whitehall, London.

8, Clifton Villas, Truro,
Feb. 15, 1895.

SIR,

In pursuance of section 20 of the Metalliferous Mines Regulation Act, 1872, I have the honour to report to you that during the past year I have exercised the duties of an Inspector of Mines in the South-Western District, and that in so doing I have acted as assistant to and under the direction of the Inspector in charge of that district.

I am,
Sir,
Your obedient Servant,
E. E. V. STOKES.

The Right Hon. the Secretary of State,
Home Office, Whitehall, London.

MINES.

REPORT

BY

JOHN GERRARD, Esq.,

H.M. INSPECTOR OF MINES

FOR THE

MANCHESTER AND IRELAND DISTRICT (No. 6),

TO

HER MAJESTY'S SECRETARY OF STATE,

UNDER

The Coal Mines Regulation Act, 1887,
the Metalliferous Mines Regulation Acts, 1872 and 1875,
and the Slate Mines (Gunpowder) Act, 1882;

For the Year 1894.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
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1895.

[C.—7667.-XII.] *Price* $7\frac{1}{2}$*d.*

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Mr. John Gerrard's Report.

REPORT on the INSPECTION of Coal and Metalliferous Mines in the MANCHESTER and IRELAND DISTRICT, for the Year 1894.—By JOHN GERRARD, Esq.

SIR, Worsley, Manchester, February 1895.

I HAVE the honour to present my Report for the year ending 31st December 1894.

It is satisfactory to know the loss of life has been rather less than in the previous year, and less than in the year before that; this is accompanied by an increase over both years in the number of persons employed and the quantity of minerals raised.

As regards the trade during the year, short time has been very marked, a number of the pits only working three and four days per week. The prices obtained for coal have materially fallen from the beginning to the end of the year.

The prominent questions just now appear to be the danger connected with coal dust, and the use of explosives.

The danger connected with coal dust is becoming more and more recognised.

The removal of the dust from the floor is attempted at many mines; this does not reduce the danger connected with dust lodged on the upper parts and sides of the roadways. Splashing water on the floor from watering tubs is a partial and perfunctory operation. At only six mines have water sprays been fixed in the main roads, at only three are they at present in operation. At some mines sprays failed because the arrangement was a bad one, in place of the water issuing in a fine spray, the water dripped on to the floor at the point of issue and brought on the evil of disturbing the floor, causing an upheaval. Water spraying failed not in principle, but in the application thereof. I am absolutely certain that, apart from the danger, it would pay owners to remove the dust on haulage roads. More work would be done, and the running of the tubs would be more economical in every way. It should not be forgotten that apart from the danger arising from the use of explosives, should an explosion of fire-damp occur in a mine a coal dusty road feeds that explosion with appalling and disastrous results.

I am glad to be able to say that in this district the use of gunpowder has been discontinued at a number of important mines during the past year. So-called safety or flameless explosives are used at a large number. At mines where these explosives are used, together with safety lamps, 23,000 persons are employed.

7,500	,,	where gunpowder and lamps used.
2,000	,,	,, ,, candles used.
500	,,	where no explosive used, and candles.

The safety explosives used are roburite, carbonite, bellite, ammonite, ardeer powder, the water cartridge, and it is proposed to introduce one called westphalite.

It is only quite recently that independent experiments have been made with a view to prove the safety of these explosives.

The North of England Institute of Mining and Mechanical Engineers once more occupies a prominent position, and deserves the gratitude and support of all interested in the safety of mining. The experiments they have made, and are still carrying on, will, it is to be hoped, conclusively show what reliance is to be placed on safe explosives. Whilst, from one point of view, it is certainly alarming to know that one after another of these explosives has been introduced into fiery mines to be proved by actual use, on the other hand, the fact that millions of shots have been fired without any explosion being proved to have resulted, is some evidence in their favour.

Mr. William Saint continues inspector assisting.

Mr. George B. Harrison in January 1894 succeeded Mr. James Grundy in the same position, Mr. Grundy being still engaged in India.

The reports of Mr. Saint and Mr. Harrison, as required by the Metalliferous Mines Act, are appended.

PERSONS EMPLOYED.

The following table gives the number, &c. of those employed, for the past year and the preceding two years, in the North and East Lancashire Coal Mines :—

—	1894.	1893.	1892.
A.—UNDERGROUND.			
Boys, 12 to 16 - - -	2,530	2,537	2,881
Males above 16 - - -	30,716	30,289	30,078
Total - -	33,246	32,826	32,959
B.—ABOVE-GROUND.			
Boys, 12 to 13 - - -	22	26	41
„ 13 to 16 - - -	605	527	537
Girls, 13 to 16 - - -	32	25	37
Females above 16 - - -	453	410	447
Males above 16 - - -	5,047	4,977	5,078
Total - -	6,159	5,965	6,140
Total, A and B -	39,405	38,791	39,099
C.—TRAMWAYS, WASHING AND COKING COAL.			
Boys, 12 to 13 - - -	2	1	4
„ 13 to 16 - - -	46	50	79
Males above 16 - - -	813	784	913
Total - -	861	835	996
Total, B and C -	7,020	6,800	7,136
Total, A, B, and C -	40,266	39,626	40,095

By reason of the long labour suspension in 1893, the number employed in 1892 is here given for further comparison. The annual returns require the number of persons employed on tramways in washing and coking coal to be given separately; the foregoing table gives those persons.

In the coal mines of Ireland there were employed :—

—	1894.	1893.	Increase.	Decrease.
UNDERGROUND.				
Boys, 12 to 16 - - -	38	42	—	4
Males above 16 - - -	666	589	77	—
Total - -	704	631	73	—
ABOVE-GROUND.				
Males, 13 to 16 - - -	15	14	1	—
Females above 16 - - -	1	1	—	—
Males above 16 - - -	228	201	27	—
Total - -	244	216	28	—
Total, above and below -	948	847	101	—

In the metalliferous mines of North and East Lancashire (excluding the detached part of North Lancashire) there were employed :—

—	1894.	1893.	Increase.	Decrease.
UNDERGROUND.				
Males above 16 - - -	261	203	58	—
Total - -	261	203	58	—
ABOVE-GROUND.				
Males, 10 to 13 - - -	1	—	1	—
" 13 to 18 - - - -	7	5	2	—
" above 18 - - -	258	321	—	63
Total - -	266	326	—	60
Total, above and below -	527	529	—	2

In the metalliferous mines of Ireland there were employed :—

—	1894.	1893.	Increase.	Decrease.
UNDERGROUND.				
Males, 13 to 16 - - -	25	24	1	—
" above 16 - - -	357	402	—	45
Total -	382	426	—	44
ABOVE-GROUND.				
Males, 10 to 13 - - -	1	—	1	—
Females, 13 to 18 - - -	1	3	—	2
Males, 13 to 18 - - - -	27	26	1	—
Females, above 18 - - -	11	9	2	—
Males, above 18 - - - -	153	175	—	22
Total - -	193	213	—	20
Total, above and below -	575	639	—	64

MINERAL PRODUCTION.

The following table gives the amount of minerals produced under the Coal Mines Regulation Act in North and East Lancashire :—

—	Tons.		
	1894.	1893.	1892.
Coal - -	10,529,335	7,603,755	10,444,054
Fireclay - - -	110,358	95,286	127,319
Pyrites - -	703	459	622
Total -	10,640,396	7,699,500	10,571,995

Under the Metalliferous Mines Regulation Acts in North and East Lancashire there were raised 73,294 tons of flagstone and 12,650 tons of rock-salt.

In Ireland there were 112,604 tons of coal raised, against 105,678 tons in 1893. Of fireclay, 6,000 tons. Increases of 6,926 and 2,500 tons, compared with 1893.

Under the Metalliferous Mines Regulation Acts 142,549 tons of minerals were raised, an increase of 15,855 tons, compared with 1893.

The values of the minerals produced are—

Coal Mines Regulation Act.

North and East Lancashire.

Mineral.	1894.			1893.		1892.	
	Quantity.	Price per Ton.	Value.	Price per Ton.	Value.	Price per Ton.	Value.
	Tons.	*s.* *d.*	£	*s.* *d.*	£	*s.* *d.*	£
Coal - -	10,529,335	7 4·4	3,878,943	7 9·8	2,974,701	7 6·5	3,938,278
Fireclay - -	110,358	3 3	17,992	—	16,413	—	22,811
Pyrites - -	703	—	206	—	91	—	93
Total -	—	—	3,897,141	—	2,991,205	—	3,961,182

Ireland.

Mineral.	1894.			1893.		1892.	
	Quantity.	Price per Ton.	Value.	Price per Ton.	Value.	Price per Ton.	Value.
	Tons.	*s.* *d.*	£	*s.* *d.*	£	*s.* *d.*	£
Coal - -	112,604	8 8	48,933	8 10	46,750	8 11	49,999
Fireclay - -	6,000	—	1,050	—	612	—	690
Total -	118,604	—	49,762	—	47,362	—	50,689

Under the Metalliferous Mines Acts.

North and East Lancashire (exclusive of detached part).

Mineral.	1894.		1893.
	Tons.	Value.	Value.
		£	£
Rock-salt - - - - - -	12,650	2,846*	193
Flagstone - - - - - -	73,299	31,716	31,406
Total - -	85,949	34,562	31,599

* Estimated. (In addition there is salt from brine and brine used in chemical processes.)

Ireland.

Mineral.	1894.		1893.
	Tons.	Value.	Value.
		£	£
Alum clay (bauxite) - - -	7,970	5,618	4,150
Barytes - - - - -	7,175	4,598	2,609
Cupreous pyrites - - - -	593	434†	—
Iron pyrites - - - - -	3,235	1,830†	2,035
Iron ore - - - - -	76,471	14,689	11,532
Lead - - - - - -	92	367	206
Ochre - - - - - -	471	338†	633
Rock-salt - - - - -	46,532	9,924	8,509
Soapstone - - - - - -	10	45‡	—
Total - - -	142,549	37,843	29,674

† Estimated value. ‡ Value when dressed and milled.

ACCIDENTS SUMMARISED.

Under the Coal Mines Regulation Act, in North and East Lancashire there have been 50 lives lost in 49 accidents underground; above-ground at the mines one life lost in one accident, a total of 51 lives in 50 accidents. In 1893, 52 accidents, 56 lives lost.

In Ireland there has been no fatal accident.

Under the Metalliferous Mines Regulation Acts no fatal accident has occurred in North and East Lancashire. In Ireland one fatal accident with the loss of one life; the accident occurred aboveground.

The following table gives the ratios of persons employed, quantity of mineral raised per accident, and per life lost, under the Coal Mines Act, in North and East Lancashire:—

—	Under-ground.		Persons employed Under-ground.		Above-ground.		Persons employed Above-ground.		Above and Below ground.		Persons employed Above and Below ground.		Tons of Mineral produced.					
													Underground.		Above-ground.		Above and Below.	
	Fatal Acci-dents.	Lives lost.	Per Fatal Acci-dent.	Per life lost.	Fatal Acci-dents.	Lives lost.	Per Fatal Acci-dent.	Per life lost.	Fatal Acci-dents.	Lives lost.	Per Fatal Acci-dent.	Per life lost.	Per Fatal Acci-dent.	Per life lost.	Per Fatal Accident.	Per life lost.	Per Fatal Acci-dent.	Per life lost.
Including those employed on tramways in washing and coking coal.	49	50	678	665	1	1	7,020	7,020	50	51	805	789	217,151	212,808	10,640,396	10,640,396	212,808	208,635
Excluding the above.	49	50	678	665	1	1	6,159	6,159	50	51	788	773	217,151	212,808	10,640,396	10,640,396	212,808	208,635

The following table shows the ratios of deaths from accidents in and about the mines (including private branch railways, coal washing, coking, &c.), under the Coal Mines Act, per 1,000 persons employed, and per 1,000,000 tons of mineral raised, during the year 1894:—

—	Death-rate from Accidents per 1,000 Persons.							Death-rate from Accidents Above and Underground per 1,000,000 Tons of Mineral raised.
	Employed Underground.					Employed Above-ground from all Causes Above-ground.	Employed Above and Under-ground.	
	By Explosions of Firedamp or coal-dust.	By Falls of Ground.	In Shafts.	Miscel-laneous.	From all Causes Under-ground.			
North and East Lancashire	·030	·993	·180	·301	1·504	·142	1·267	4·793
Averages of the Kingdom	·556	·779	·135	·311	1·782	·826	1·598	5·651
Do. in preceding year	·291	·749	·187	·482	1·709	·900	1·552	6·043

The following table shows the ratios of deaths from accidents in and about the mines, under the Metalliferous Mines Regulation Act, per 1,000 persons employed, during the year 1894:—

—	Death-rate from Accidents per 1,000 Persons.						
	Employed Underground.					Employed Above-ground from all Causes Above-ground.	Employed Above and Under-ground.
	By Explosions of Firedamp.	By Falls of Ground.	In Shafts.	Miscel-laneous.	From all Causes Under-ground.		
Ireland	—	—	—	—	—	5·181	1·739
Averages of the Kingdom	—	·650	·800	·550	2·000	·434	1·359
Do. in the preceding year	—	1·082	·565	1·271	2·919	·197	1·781

A list of all the fatal accidents of the year is appended, at page 21 of this Report.

EXPLOSIONS OF FIREDAMP.

One fatal explosion causing the loss of one life.

Two non-fatal ones injuring three persons. All occurred in the Lancashire portion of the district.

The fatal one took place at Bankhouse Colliery of the Oldham, Middleton, and Rochdale Coal Company, Limited, near Oldham, in the Mountain Mine seam of coal, on the 8th of August, about 5 p.m. James Henthorn, 32, shot-lighter, was so badly burned that he died on the 10th August. From his own statement immediately after the occurrence, he knew gas was in the place but "thought it was not dangerous." He lit the fuze of a gunpowder shot by wire through the gauze of a Davy lamp. The gas was fired from the fuze. The front of the shot-hole was 15 feet from the face of the place, called a "work;" it was 17 feet wide and alongside a "work" finished. The shot was in the roof, intended to increase the height of drawing road and to obtain material for building the pack wall. About $\frac{1}{3}$lb. of gunpowder was in the hole; this was six inches from a hole containing a similar charge which had missed fire on the previous day. None other than deceased was in the vicinity when the explosion happened, the colliers had ceased work. Reuben Jagger, 43, worked as collier in the place up to 4 p.m., his son Benjamin, 19 years of age, acted as drawer. Reuben Jagger admitted that some time before he ceased work he knew gas was in the place. He saw the indication clearly in his lamp. He filled three tubs after seeing gas. Left the mine and went home without having reported to anyone that gas was in his place, although he knew a shot was to be fired that evening. Charles Desboro, 33, fireman, visited the place at 12 noon; did not discover any gas; admitted that he only reduced the flame of his lamp one-half in examining, and that the collier remarked to him that the place was "close."

The accompanying plan shows the form of the place and its ventilation. There was no curtain or sheet in the level to turn air into the work. The pack wall was 15 feet back from the face. There was a small hole through the pack by the side of the road of the adjoining work on the inbye side. So that if any gas was given off it had full opportunity to accumulate at the face. No gas had been seen in that place previous to the day of the explosion. On the 28th of June in a place 60 yards away gas was found for a week.

Probably had the fireman made a searching examination when he visited the place at noon, he would have found a slight indication of the presence of gas. Apart from that, the observation of the collier that the place was "close" was a hint as plain as is usually given by colliers, and together with the fact that the pack wall was so far behind, should have led him to put up a sheet in the level and to brattice from the end of the pack. The fireman proved himself to be incompetent for his post. He had been a fireman 10 months, hooker-on and daywageman one year, coke burner two years, hooker-on one year, stage waggoner half a year, collier one year, waggoner eight years. Hardly the experience to qualify for the important position of fireman.

At the inquest the jury returned a verdict of accidental death, adding that in their opinion the place was not sufficiently ventilated. At your direction proceedings were taken against the manager, who is also the agent and a justice of the peace, a mining engineer of distinguished position in the district, and who has always shown every regard for the safety of the mines under his charge. The magistrates decided that there was not sufficient evidence for them to convict of a breach of the 1st General Rule.

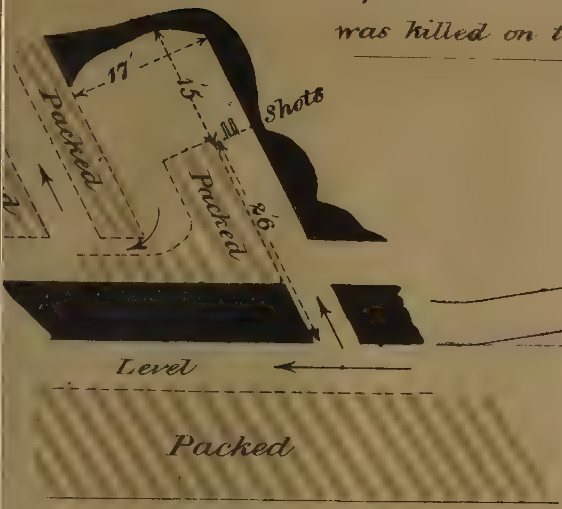
Proceedings were taken by the manager against Reuben Jagger, the collier, for breach of Special Rules 56 and 57 in not reporting the presence of gas. He was convicted, fined 1*l.* and had 12*s.* costs to pay. The fireman was deposed.

At the Mosley Common Colliery of the Bridgewater Trustees, Worsley, on the 27th of October, about 3 a.m., James Hunter, 44, chargeman tunneller, and Robert Morris, 20, assistant, were very severely burned by an explosion of firedamp. They were driving a tunnel, rising 1 in 3, to win a seam of coal (the Seven Feet) overhead. The tunnel worked in the night shift only. About 9 p.m. Evan Richards, 55, fireman, visited the place to examine prior to the entry of workmen. Admits that he did not examine the cavity in the roof (shown in accompanying plan) to the top, 9 feet; held his lamp as high as he could reach; that at the face near the roof the lamp carried a small "cap," showing there was a little gas present; that he did not report this in the report book; did not consider it dangerous.

Twenty minutes after this so-called examination, Hunter, Morris, and two others entered the tunnel. Morris stated that on arriving at the cavity (14 feet back from face) Hunter tried his lamp above the hurdle; it showed gas was there. Their lamps were taken back a short distance and Hunter waved a small piece of brattice cloth above his head to disturb the gas in the cavity. They began to work at the face of the tunnel. Three shots were prepared, charged with gunpowder; when ready for firing Hunter pulled down the brattice

BANKHOUSE COLLIERY

Fatal explosion of firedamp by which James Henthorn was killed on the 8th August 1894.



PLAN

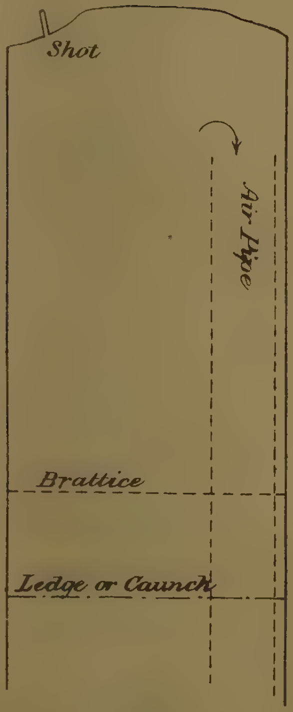
Scale 20 Feet to Inch.

SECTION

Scale 10 Feet to Inch

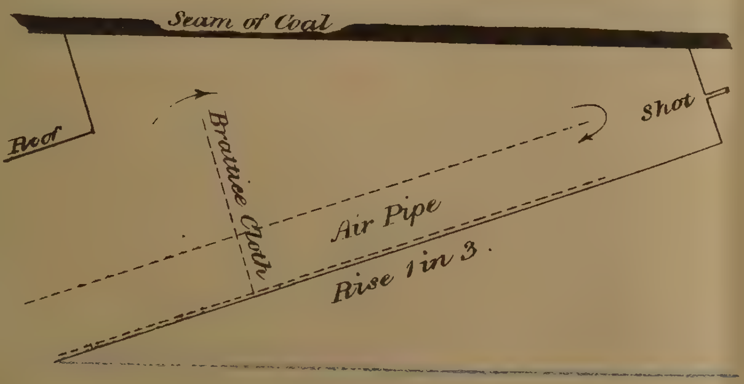
MOSLEY COMMON COLLIERY

Nonfatal explosion of firedamp by which James Hunter and Robert Morris were injured on the 27th October 1894.



PLAN

Scale 5 feet to Inch



SECTION.

Scale 5 Feet to Inch

John Gerrard.
H.M. Inspector of Mines

Wyman & Sons, Ltd, Lith, 63, Carter Lane. 8.2.95

hurdle on the grounds that the shots would have damaged it. The shots were then fired by Hunter, taking his lamp top off and lighting the fuzes from the open lamp (using short matching fuzes). This was about midnight. They all had supper near the entrance to the tunnel, which occupied 40 minutes. On returning to the face of the tunnel, Hunter saw that a small piece projected from the face on one side; it had not been blown down by the shots. He said, "We 'll have a hole here, Bob." Morris said it could be got off with the pick. Hunter replied, "It 'll blow better." A hole was drilled 8 or 9 inches deep and charged with powder. The brattice cloth hurdle, taken down about 12.30, was not replaced. About 3 a.m. Hunter told Morris to take the top from the shot-lighting lamp, at the time unlocking it. Morris, knowing that Hunter had not examined the place, lifted the lamp up towards the roof, saw clear indications of the presence of gas, said to Hunter, "It's there as usual, Jim." Hunter said, "Oh, never mind, it'll tak no hurt." Morris then called to one of the others down the tunnel to bring a loose piece of brattice cloth up, it being in his mind to "batt" out the gas. Hunter countermanded the direction, and told Morris to take the lamp top off. Morris did so and immediately the gas fired. Fortunately the place was wet, the inclination somewhat great, so that the explosion was limited to the top of the tunnel, and the two men soon got out of the flame, which did not extend to where the other two persons were, down the tunnel. To show what happens, although so badly burned, Hunter said to Morris, "Now, Bob, thou mun keep it a secret," And in response to the under manager's inquiry at the surface as to how it happened, Hunter repeated three or four times that the gas fired through the lamp, when the lamp top was on; and only on the undermanager refusing to believe it did Hunter say that he might as well tell the truth, the lamp top was off. And to the question, was the cloth down, "Aye."

The plan shows the tunnel was ventilated by iron pipes, 22 inches diameter.

I have given full details of this and the preceding accident, for in the 21 years engaged as an inspector I have rarely found such reckless disregard of life, or of rules, and such a wanton use of gunpowder. After full and careful consideration I was advised no conviction could be obtained against the manager or fireman. The admissions of the fireman to me could not be used against him. The owners proceeded against Hunter, who was convicted on two charges and fined 20*s.* in each, plus the costs.

The third explosion of firedamp occurred at the Railway Pit of the Cliviger Colliery, near Burnley, on the 24th of October, 10 a.m., Henry Chadwick, 35, dataller, slightly burned on one arm. Had gone into a place with a candle, the collier not working that day. Chadwick was laying hold of the top of a tub to push it out, the candle in his right hand, when there was a flash of flame, he dropped down and crept out. The fireman had examined the place about 6.15 a.m. and it was then quite clear. About 7.15 a.m. Chadwick and another were sent to repair the timbering near this place. Chadwick went in, seeking a pick, which he got from the top of the laden tub; there was no gas present then. The place was alongside a large fault; a place cut through the pillar for return was found to have a fall of roof in it, which explains the accumulation of gas. Safety lamps have been put in use throughout the district.

FALLS OF GROUND FROM ROOF AND SIDE.

These have caused 33 accidents, involving the loss of 33 lives. Twenty-six were from the roof and seven from the side. This is eight more than last year and three more than the year before that. The loss under this head is 64 per cent. of the total loss of life in the district from all causes.

Carefully considering the falls from side, six were in working places, one in roadway. Five were falls of coal, two of overlying roof. In four out of the seven that which fell overhung, was top heavy. In four the deceased had been trying to get down that which fell, or were engaged in trying to get down, when falls occurred; they were in such a position as endangered themselves when the coal came down. Not one of these but ought to have been avoided.

In like manner examining the falls of roof, 16 were in working places, 10 in roadways. Three were from falls of roof coal. In 14 cases there were slips or breaks associated with the fall, many of them clearly pronounced and known to be there (11 such). Two were bordering upon falls of side, the roof overhung and was unsupported. In nine cases props were either being taken or the fall followed immediately after; in one case a fireman knocked out six props one after the other in great haste, never paused or listened a second, the evidence was perfectly clear. Some of the accidents have followed very shortly the visit of the fireman; this official in some cases having fallen far short of that one would like to see, in regard to careful examination of the place, the discovery of indications of weakness in the roof followed

by insisting upon the collier coming himself to the spot, and seeing that a full view of the danger was recognised by the collier.

Holding these views, how can I think other than that many, if not most, of the accidents from falls of roof and side are preventible. I am bound to say also that uniformity of timbering, whilst it would prevent many, would not provide for all. Some of the falls have occurred where such uniformity has been established, by direction of the manager. Often do I feel grateful to the coroner who permits a little latitude in the examination of a witness at an inquest, and enables one to show the true circumstances attending the unfortunate fatality; when the coroner has satisfied himself as to criminal negligence or accidental death by a few plain questions, bringing home to the witness, often a surviving companion, how by a little care the accident might have been avoided. In these cases "*De mortuis nil nisi bonum*" does not apply. It was after attending one of these inquests, where, owing to a more than ordinary intelligent witness, and a fair one, it was clearly shown that the slips to which the fall was due ought to have been seen and provided for. Walking with the police constable, he told me that he had worked as a hewer in Northumberland, that it was the established practice in those days to mark in the coal the position of any back or slip revealed in hewing. I had not before heard of it. Unquestionably such a practice increases the observing power of the worker, records what has so often not been noticed, or, if so, forgotten. Many of the slips continue from the coal into the roof; it must needs be so from their cause, from their formation.

IN SHAFTS.

Five accidents, causing six deaths. The same loss of life as last year, with one less accident.

Two occurred in connexion with the use of intermediate landing places or mouthings; such places require the most perfect arrangements as regards fencing and signalling. Even then their use should be limited as far as is practicable.

One happened at the bottom of a shaft. The evidence of George Benson explains how:—
" The deceased, George Benson, was my father, 72 years of age, employed as furnaceman at
" the bottom of No. 2 upcast shaft. He went down and came out by the No. 5 shaft.
" I am hooker-on at the top landing of the same shaft, of the Scot Lane Colliery, Blackrod.
" On Wednesday, the 17th of January, I was at my post at about 3.20 p.m., being 16 yards
" above the bottom. One cage only goes to the bottom, the other cage stops at my landing.
" As the bottom landing cage descended in the ordinary way I heard a cry 'Oh!' I knew
" it was the time for my father to come out. I thought the cry came from him, and
" signalled for the cage to be raised a little. I then slid down the guide rod (round rope)
" to the bottom, and found it was my father, sitting on the scaffold underneath the cage,
" about the centre; his lamp lay beside him. He must have been crossing the shaft.
" Ordinarily he did not do so. He got into the cage from the side he left to cross the shaft.
" I do not know why he crossed; he had no need to do so, kept nothing on the other side.
" It is contrary to the rules to cross. He had been a fireman many years, and would well know
" the rules. He may have walked on to the scaffold in a 'maze.' He was very active and
" had all his senses fully." The manager agreed to put up a fence rail, which would stop anyone from inadvertently walking across the shaft.

Another caused by cage crushing occurred at the top of the Alkrington Pit of the Chamber Colliery Company, Limited, on the 11th of December, about 5.45 p.m. Herbert Hodgson, 14, horse driver, stood by his stepfather's side at the shaft top, ready to descend; the stepfather, being the hooker-on, was going down before the ordinary workers; his statement will best explain the accident:—" We got our lamps and went on the pit bank. Albert
" Hilton, the banksman, was there; he shouted to the engineman, 'Tom will go down,
" Joe.' Hilton stood by the cage, which was not quite level with the landing plates.
" Hilton shouted to the engineman, 'Are you right?' There was no answer. Just then
" my stepson stepped forward to enter the cage; as he was entering, the cage was lowered,
" he had one foot on the cage, was caught by the top hoop, crushed against the landing
" plates, and carried out of sight. His body was brought up soon afterwards, I believe
" from a bearer about 10 feet below the landing plates. I think the engineman believed
" the banksman called out 'Right,' and that we were in the cage ready for lowering.
" There is no system or means of signalling from the banksman to the engineman; he always
" shouts. It was the first time whilst I have been there that the banksman asked the
" engineman, 'Are you right?' It was the first time deceased stepped into the cage before
" me." The banksman corroborated, said he grabbed at the boy when he saw the cage

move, but was too late; had not seen the boy move forward towards the cage, or would have stopped him. It was quite dark, there was a good fire burning in the damp iron near the pit top, and there were several lamps lit in the engine-house. He always shouted to the engineman, and the engineman to him. Sometimes it happened that the engineman did not hear him. The engineman (20 years' experience) said he heard the banksman shout, "Tom will go down," was ready and waiting, could see the lamps Tom and the boy carried. The banksman then shouted what seemed to him to be "Right," and thinking they had got in the cage, it was lowered 85 yards; before being stopped a man opened the engine-house door, shouting "Stop! stop!" Never before had the banksman asked, "Are you right?" He always shouted, "Right" as a signal to lower the cage. It was perfectly clear the accident was due to a misunderstanding between the banksmen and engineman. I take it the 25th General Rule, which requires signals in connexion with the shaft to be distinct and definite, applies to communications from the banksman to the engineman. Had there been means to signal distinct and definite, there would not have been this fatal misunderstanding. There were no "keps" ("catches," "rests," "fallers," or "knees") at the top of the shaft for the cage to rest on. These might have prevented the accident. I was told they were made, and ready to be put in position. It seems that various views are held as to the necessity for these appliances. My own view is that any appliance which the use of will at all safeguard mining operations should be a necessity. I have always found the Chamber Colliery Company's pits well supplied; the management is able, and of high standing.

Have been frequently struck with the practice at many large collieries in this district as regards the banksman, the very minor part he plays. He does not give the signal to the hooker-on, required to be given before men ride. The engineman does. At some pits the banksman has neither the means of signalling to the hooker-on or to the engineman, unless he lays hold of the wire by his hands. There may be something to be said in favour of the engineman signalling; it is questionable whether there is not more to be said in favour of him being limited to the charge of his important machinery. Again, at some pits the banksman has no means of knowing what signals have been given by the hooker-on; of course, the signals are required to be in the engine-house, but at all well-regulated pits there is an auxiliary arrangement which, at the same time as the engineman is informed in the engine-house, informs the banksman. Where banksmen communicate to the engineman by waving hands and arms about, no one can tell what is meant to be conveyed unless they happen to see the first movement. Shouting is equally liable to be misunderstood. Let there be proper appliances for giving distinct and definite signals. There need be no confusion, if bells are used there is ample range in tone and form to provide distinctness.

The remaining shaft accident occurred at Pendleton Colliery; although two lives were lost it was so simple that the explanation given in the list of Fatal Accidents (No. 38 on the list) appears to be sufficient. It was primarily caused by the impetuosity of one of the deceased, who paid the penalty.

BY EXPLOSIVES.

One fatal accident, causing one death, three non-fatal, injuring eight persons.

The fatal one happened at the Chanters Pit, Atherton, belonging to Messrs. Fletcher, Burrows, & Co. On the 1st of May, about 8 p.m., Robert Benson, 28, son of the contractor for driving a tunnel, was assisting the fireman to fire four shots. Having lit the four shots, had only got five yards away when one of the shots exploded. Benson was struck by the débris, and from the injuries sustained he died on the 5th. The four holes were in the face of the tunnel, which is 12 feet wide; two shots, A and B, were on the left side, and two, C, D, were on the right side of the tunnel. The shot A was 2 feet deep, it was near the floor; 7 bobbins of powder were put in = about $1\frac{1}{6}$ lb.; 2 feet of fuze cut off for that hole, leaving 6 or 8 inches outside the hole. The shot B was just above the shot A, on the same side, was just over 2 feet deep, 1 lb. of powder put in, 30 inches of fuze, leaving 8 to 10 inches outside the hole. The shot C was near the centre of the tunnel on right side. The hole was 27 inches deep, $1\frac{1}{2}$ lb. of powder put in, 36 inches of fuze, about 16 inches outside the hole. The fourth shot, D was near the right side of tunnel, the hole was 29 inches deep, 1 lb. of powder put in, 42 inches of fuze, leaving 22 inches outside the hole. The fireman, William Turton, did this, being assisted by Benson. He next proceeded to light the shots, standing by the hole A; he, by means of a wire heated in the flame of his lamp, lit a short piece of "matching" fuze, about 2 inches in length. From this short fuze he lit the fuzes of the

shot A and B, then lit from the same match another short piece of fuze, and from this lit the fuze of the shot C; on trying to light the fuze of the shot D there was a little delay, the match had lost its power, he tried to light the fuze, but could not, he reversed the piece, and from its last spit managed to light the fuze of the shot; he shouted, "All let, run." Both ran from the face, but had only gone 5 yards when the shot A went off. Turton was first, and heard deceased shout, but dared not look round, ran on and got in the manhole. After the fourth shot had gone, went back, and found Benson dreadfully injured, stones lying all about him. The firing of a series of shots together underground is always attended with great risk. In this case, although it was desired that the A shot should go first, Turton either failed to give sufficient fuze to that shot, or there was longer delay in the lighting of the last shots than he was willing to recognize. Such an accident as this would not occur with electric firing. The change from electric firing with the use of carbonite explosive had only been made shortly before, at the express desire of deceased and his father.

Of the non-fatal explosions, the first occurred on the 13th February, about 7.30 a.m., at Gurteen Colliery, Castlecomer, co. Kilkenny. Thomas Brennan, collier, was carrying in his left hand a cannister containing eight brown paper cartridges, containing each $\frac{1}{2}$ lb. of loose gunpowder, a pound of candles, and a lighted candle in his right hand. He was walking to his working place underground. On reaching the junction with No. 3 Level he saw Ryan, the fireman, approaching, and simultaneously "jowled" his head against the roof, which suddenly lowered at that point. Was not stunned, but was about to sit on his "hunkers" to await Ryan's instructions, when he saw "blue blazes" coming out of the cannister, he hurled the cannister from him, and ran back towards the pit. His hands were burnt. On returning he found Ryan sat down badly burned about the face, the cannister, minus the lid, close by. Three colliers who were in the road near Ryan were all burned more or less. Brennan's statement was not reliable. Michael Dooley said that he saw him carrying the cannister on his left arm, the lighted candle in his left hand, and that he warned him to be careful, thought he was carrying it carelessly and in a risky manner.

On the 4th of October, at the Rock Colliery, Castlecomer, co. Kilkenny, about 8.30 a.m., two brothers, James and William Doyle, 21 and 18 years of age respectively, were injured by the explosion of a charge of powder they were recklessly drilling out. The shot had missed fire on the previous day. Proceedings were taken against them at the Castlecomer Petty Sessions, they were convicted and fined *5s.* each, with costs *2s. 6d.* and *2s.*

On the 15th of November, about 3.30 p.m., in the Arley Pit of the Hulton Colliery Company, Peter Lane, 36, collier, was injured by the explosion of a detonator and a portion of a charge of ammonite he was recklessly drilling out. The charge had missed fire on the same day. The fireman had placed a prop before the hole, having chalked on it "Miss-shot." Proceedings have been taken; he was convicted and fined 10*s.* and costs 10*s.*

ON INCLINED AND ENGINE PLANES.

Seven accidents, causing seven deaths, where last year 15 accidents caused the loss of 16 lives.

The first (No. 41 on the list) was the result of a tub being left on an inclined road with a piece of iron behind; a drawer after moving the tub did not replace the iron, the tub followed him down the inclined road, overtook and caused his death. It was wrong for the drawer to leave the tub unspragged, it was quite as wrong to leave a tub standing on an inclined road.

No. 45 on the list was caused by the hauling rope mounting the flange of the drum, 2 feet 8 inches in diameter; the jerk caused the capping to draw, six full tubs ran amain. Deceased was in attendance on a door in the plane; he had to stand behind the door and open it by pulling a chain; there was a manhole besides the door for him to stand in. The runaway tubs crashed through the door, deceased must have been caught, for he was found lying in the road badly injured, the tubs jumbled together 14 yards below him. There was a good flange to the drum, but the rope wound irregularly on the barrel; it was the first day of working, and the necessity for a guiding pulley had not been proved. There was a drag behind the tubs, a short straight one, the floor being soft it readily turned over and and allowed the tubs to run. The whole thing was a temporary arrangement or should have advised the removal of the doors.

No. 46 was also caused by tubs running amain. Deceased was employed at the bottom of a rise endless chain road, the full tubs being carried up the brow, the usual fork attached to

each tub, in which fork the chain grips. The brow is 270 yards long, rises one in 10 or 12 The tubs are put on about 20 yards apart. Somewhere near to the top of the brow a tub must have become detached from the chain, either by twisting out of the fork or a jerk of the chain, ran back against the next full tub, dislodged that, and both keeping the rails carried forward the detachment throughout the whole length. The attendant in charge of the bottom heard the row, and called in the usual terms, "Look up, Jack," at the same time running for his life. Deceased was caught and carried by the 10 full tubs into the shunt below the level. So far as the chain, forks, tubs, and road, all were in good order, and such a stripping had never been known to occur in that brow before. Since this accident, catches have been fixed in the full road so as to hold the full tubs after passing over, in case they run back.

No. 47 on the list, another death from being crushed by a tub on an inclined road. On the 20th December, 2.45 a.m., Robert Pearson Platt, 18, waggoner, was at the bottom of a jig brow in the White Mine, Manor Pit of the Clifton and Kersley Coal Company, Limited. Thomas Albert Greehalgh, 18, was at the top of the brow, his statement explains what occurred :—"Deceased had gone for an empty tub, on returning with it to the bottom of the " brow he shouted, 'Ar' ta full ?' I replied, 'Aye.' He shouted, 'Let it down then.' I " replied, 'Ar't out of th' road ?' There being no answer I let the tub down, as I thought, " to the bottom. Went away four yards to move some dirt. Hearing deceased shout, and " not being able to tell what he said, went down the brow 6 or 7 yards, called, 'Hallo, Bob, " how many more are there ?' He said, 'There are two, but thou'll have to come down when " 'tha's filled this tub, or let that down.' Immediately I heard the noise of a waggon running, " followed by groans. Shouting to the men near, 'There's something wrong yonder, be " 'quick!' ran down the brow, 33 yards, saw the full waggon I had let down against " deceased, he was pinned against the side of the level at the bottom of the brow. Laid on " his right side, one wheel against his head. The men and I released him, he died in about " half an hour. The waggon I had lowered must have stopped in the brow a few yards from " the bottom. There was a piece of dirt in the brow, but I could not say if that stopped " the waggon. There were no means of signalling in the brow, we had to shout."

Apparently deceased did not know the tub was standing a short distance from the bottom. Greenhalgh must have disturbed the rope and so caused the tub to move. There being no means of signalling, the brow being over 30 yards in length, was a distinct violation of the rules. The owners proceeded against the fireman at the Bolton Petty Sessions, the magistrates convicted. To show how difficult it is sometimes to get magistrates to understand the importance of maintaining a strict observance of the Coal Mines Regulations, in this case it was their intention to inflict payment of costs only, apparently because defendant said shouting could be heard. On the solicitor appealing, they inflicted a fine of 1*s.* and costs. It is more difficult to understand such a course from the fact that one of the magistrates is a coalowner and mining engineer. On another occasion a collier was charged with having his lamp in an unsafe position whilst holing, the lamp being damaged ; the magistrates took the word of the defendant, supported by his brother, that the position the lamp was in was a safe one, and dismissed the case. Over and over again has it been laid down by those who ought to know, that strict discipline is the surest preventive to accident. I find it most difficult to induce owners to take magisterial proceedings. The loss of time, laying information, hearing of case ; to end with dismissal or light penalty, is not calculated to encourage owners to take what is, after all, the fairest course, for the system of fines is open to abuse by those in authority. Again, there is no publication beyond the limited few, those dealing and those dealt with.

ROPES AND CHAINS.

One accident, causing one death.

On 2nd of February, about 7.15 a.m., at the Spindlepoint Pit of the Clifton and Kersley Coal Co., Limited, Thomas Kay, 13, drawer, was crushed by tubs which ran back on to him owing to the link next the swivel at the end of the haulage rope breaking. Ten full tubs (10×3 cwt. $+ 10 \times 6$ cwt. $= 4\frac{1}{2}$ tons; inclination 1 in 5 to 1 in $2\frac{1}{2}$, say $1\frac{1}{2}$ ton) were being drawn out of a shunt into the engine plane ; when the train had gone up the plane about 15 yards the link broke. Deceased was in the act of putting the fork or drag behind the last tub when the gang-rider shouted "Look out," but the tubs ran back on Kay. He

had no business to touch the drag, it was the gang-rider's work. Deceased asked to be allowed to do it. Professor Goodman very kindly sent me the following report :—

Report on Tension Test of one Specimen of a Broken Chain Link.

Engineering Laboratory,
The Yorkshire College, Leeds,
22nd February 1894.

John Goodman, A.M.I.C.E., M.I.M.E.,
(Professor of Civil and Mechanical Engineering).

Yorkshire College Test Number.	Cross Section Diameter—Inches.	Area in Square Inches.	Reduction of Area per Cent.	Extension per Cent. on 1 Inch.	Elastic Limit in Tons per Square Inch	Maximum Stress in Tons per Square inch.
1035	Turned down to 0·512	0·206	37·9	36·0	20·78	28·54

Remarks :—

Fibrous.—Slightly crystalline fracture. The link was straightened hot and turned in the centre before testing. The metal is of a distinctly good quality, it would have been better to have used a softer and more ductile iron, with a lower tensile strength for the chain.

I must confess that I thought the fracture showed a very crystalline condition. Professor Goodman assured me that sudden fracture often gives crystalline appearance.

ON THE SURFACE.

One accident, causing one death, as against five in the previous year. It is sufficiently described in the list, No. 50 accident. It is very satisfactory to know that this district has the lowest number of accidents on the surface of any in the United Kingdom.

NON-FATAL ACCIDENTS.

The practice as to reporting accidents of a serious nature varies so much, that I have not hitherto noticed these in the Reports, except those having special features. Many are reported of a very slight nature, and many of the serious accidents are not reported at all. One came to my knowledge, a broken thigh, the sufferer being off work for several months. It is very desirable non-fatal accidents should be reduced to a common denominator.

116 accidents were reported under the Coal Mines Act, injuring 123 persons. All were investigated, the scene of the accident being inspected.

Explosions of firedamp, two, injuring three persons.

Falls of ground, 63, injuring 64 persons. In shafts, three, injuring three.

Miscellaneous underground, 33 accidents, 38 injured. Above ground, 15, and the same number of persons injured.

Under the Metalliferous Mines Act, five accidents, injuring five persons. They were all investigated, the scene of accident inspected. Two were from falls of ground. One in shafts. One from miscellaneous causes underground and one above ground.

DAYS WORKED.

In the Annual Returns the owners are required to give the number of days, coal, &c. drawn per month. As the new form of list of mines does not permit this information to be given as

hitherto, I have taken some of the principal pits in various parts of the district. The following table shows how those pits have worked during the year :—

Name of Mine.	Name of Owner.	Months in the Year 1894.												Average Monthly.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Huncoat	Geo. Hargreaves & Co.	26	24	25	24	26	23	26	24	19	27	25	24	$24\frac{5}{12}$
Altham	Altham Colliery Co.	26	22	23	25	25	22	25	22	26	26	26	25	$24\frac{5}{12}$
Tyldesley	Astley and Tyldesley Coal Co.	23	20	19	17	$17\frac{1}{2}$	$19\frac{1}{2}$	20	$22\frac{1}{2}$	$19\frac{1}{2}$	$21\frac{1}{2}$	18	$18\frac{1}{2}$	$19\frac{8}{12}$
Arley	Fletcher, Burrows, & Co.	$20\frac{1}{2}$	$16\frac{1}{2}$	19	$16\frac{1}{2}$	16	$18\frac{2}{3}$	22	$18\frac{1}{4}$	20	25	23	$19\frac{1}{2}$	$19\frac{7}{12}$
Bedford	John Speakman & Sons	25	24	24	25	22	22	26	25	23	27	26	25	$24\frac{6}{12}$
Arley	Blainscough Colliery Co.	21	14	13	19	17	18	19	19	19	20	17	18	$17\frac{10}{12}$
Bower	W. & R. Marland	27	24	26	21	22	21	22	18	20	24	22	21	$22\frac{4}{12}$
Bradford	C. and T. Livesey	24	25	23	23	16	20	17	17	13	14	16	16	$19\frac{6}{12}$
Bradleyfold	Thos. Fletcher & Sons	25	22	24	22	20	23	20	18	20	24	24	23	$22\frac{1}{12}$
Outwood	Ditto	23	19	20	17	16	17	17	16	16	19	20	17	$18\frac{1}{12}$
Stopes	Ditto	23	18	18	19	20	19	18	20	19	21	22	20	$19\frac{9}{12}$
Bridgewater 3 and 4	Bridgewater Trustees	24	20	21	21	20	21	20	21	19	20	20	19	$20\frac{6}{12}$
Mosley Common Trencherbone.	Ditto	23	16	15	13	14	15	13	14	12	14	13	15	$14\frac{11}{12}$
Alkrington	Chamber Colliery Co., Limited	26	24	24	25	24	25	26	25	24	27	24	24	$24\frac{10}{12}$
Stockfield	Ditto	26	22	23	20	23	21	17	10	17	20	13	13	$18\frac{9}{12}$
Newtown	Clifton and Kersley	21	20	19	19	18	20	18	18	17	21	21	19	$19\frac{3}{12}$
Denton	Denton Colliery Co.	26	23	20	21	20	21	20	16	15	18	18	16	$19\frac{6}{12}$
Ellerbeck	Ellerbeck Collieries, Limited	21	20	20	21	20	21	20	21	20	23	22	19	$20\frac{8}{12}$
Bank Hall	Executors, Hargreaves	27	24	25	25	25	26	20	23	19	23	29	19	$23\frac{3}{12}$
Arley	Hulton Colliery Co.	25	17	17	14	13	15	17	16	21	20	20	16	$17\frac{7}{12}$
Pendlebury	A. Knowles & Sons, Limited	21	16	16	15	16	19	15	16	17	21	19	19	$17\frac{6}{12}$
Royton	O. M. & R. Coal Co.	27	24	25	25	24	26	26	26	25	27	26	25	$25\frac{6}{12}$
Moston	Platt Brothers & Co.	26	24	24	25	24	23	22	17	18	23	22	20	$22\frac{4}{12}$
Scot Lane Arley	Wm. Woods & Son	22	16	19	16	17	17	14	15	20	23	21	19	$18\frac{3}{12}$
Shakerley	Wm. Ramsden & Sons	23	17	18	18	18	19	20	21	21	25	23	18	$23\frac{5}{12}$
Towneley Arley	Brooks & Pickup	27	24	25	25	22	23	23	26	22	27	25	24	$24\frac{5}{12}$
New Westhoughton	Westhoughton Coal and Cannel Co.	22	19	21	19	21	21	22	18	20	23	23	22	$20\frac{11}{12}$
Westleigh	Westleigh Colliery Co.	25	20	20	18	19	21	20	22	20	21	21	24	$20\frac{11}{12}$
Eatock	Wigan Coal and Iron Co.	22	17	16	13	13	13	12	10	13	14	17	16	$14\frac{8}{12}$
Hewlett No. 1	Ditto	22	17	16	15	13	15	13	13	13	18	21	16	16
Sovereign	Ditto	22	17	16	20	17	17	18	17	17	19	16	19	$17\frac{11}{12}$

BOARD FOR EXAMINATIONS.

The present constitution of the Board is :—

As owners: Messrs. Edward Pilkington, Clifton and Kersley Collieries, chairman; H. H. Bolton, Accrington and Rossendale Collieries; J. S. Burrows, Atherton Collieries. As mining engineers, agents, or managers of mines: Messrs. Isaiah Booth, Firwood, Alderley Edge; Clifford Smith, Bridgewater Collieries; Joseph Dobbs, Jarrow Collieries, Castlecomer, Ireland. Persons not being owners, agents or managers, and employed in or about a colliery: Messrs. Thomas Thompson, Oldham; William Isherwood, Tyldesley; James Ashworth, Accrington; and myself, as Inspector of the district.

Mr. Thomas Ratcliffe Ellis, solicitor, King Street, Wigan, continues to ably perform the duties of secretary.

The examiners appointed by the Board for the examination were :—Messrs. James Tonge, F.G.S., of Bolton; George Hollingworth, F.G.S., of King Street, Manchester; and Robert Winstanley, of Pendleton.

The examination was held in the Owen's College, by permission of the Principal and Council, to whom the Board passed a cordial vote of thanks. More fitting and commodious accommodation it would be very difficult to find.

The dates upon which candidates attended for examination were December 27th, 28th, and 29th.

One of the examiners, who for the fourth time had the honour of taking part in the examination, informs me there was a marked improvement in the character of the papers and the intelligence of the candidates. Some of the candidates did uncommonly good papers and gave great satisfaction in the *viva voce* examination. The Wigan Mining School continues to afford excellent opportunities to those seeking to advance in the knowledge of the science and art of mining. Many classes are held also in various parts of the district.

Sixty-nine candidates were examined for first-class certificates, of whom 27 passed:— Philip Beaumont, Ralph Richardson Brown, William Bunting, Frederick E. Coe, John Henry Darbyshire, Frank Eckersley, John William Evans, Ernest Goodall, Joseph Graham, James Gregory, jun., Henry William Gregory Halbaum, Frederick Heald, Harry Hodgson, James Edward Ince, Edward Jackson, Albert Little John, William Littley, Peter Lomax, Edward Lyall, Joseph Mann, John Catron Nelson, Edwin Heyworth Rosbottom, Thomas Sherwin, William Simpson, David Spence, George Henry Royston Webster, and Lewis Williams.

Ninety-five candidates were examined for second-class certificates, of whom 46 passed:— John George Alderson, William Henry Ball, William Edward Beckett, William Bennet, David Bibby, James Bithell, Thomas Blunt, Arthur William Britton, Alfred Brown, James Buckley, George Carr, Peter Chamberlain, William Collin, Joseph Davies, Robert Diggle, Thomas Edwards, Abraham Elce, jun., Henry Gray, John Halliday, Josiah Halliwell, James Rawcliffe Haworth, Robert Haworth, James Heaton, James Jackson (Farnworth, near Bolton), John Richard Jones, Henry Lomax, Chadwick Lord, Samuel Lord, Thomas Martland, Jeremiah Malbon, Edward Mills, Adam Pilkington, Thomas Ramsey, John Rigby, Edmund Riley, John Rudd, Isaiah Smith, George Bucklow Stones, Richard Summerbell, William Thomas, James Topping, George Turner, W. W. Valentine, John Worral, Thomas Yates, and William Wolstenholme.

By permission of the Board I am again enabled to give the questions submitted to the candidates and a copy of the plan of workings, of which they were asked to show the ventilation.

The requirements and standard of qualification in operation in the different mining districts is freely discussed and criticised. Various suggestions have been offered with a view to improvement. It is a very difficult question. There appears to be a consensus of opinion in favour of uniformity as regards age. How to attain uniformity as regards qualification is the difficulty. There is no classification of the mines, a certificated person can take charge of either a fiery or non-fiery mine; it is therefore necessary that all should be qualified to have the charge of fiery mines. Five years' experience is a reasonable requirement. As to how that shall be attained, could be arranged so as to have uniformity throughout the kingdom. Entirely in or about a mine (and as the definition of a mine is open to above ground alone, provision for requiring definite underground experience made), or the period of five years may contain a defined portion spent at named kinds of technical instruction, pupilage under a mining engineer, various offices in connexion with underground charge. Experience gained abroad should be permitted to count; it is unreasonable to bar a man who has purposely and at great expense gone to a large and important mine in Belgium for two or three years, and so enlarged materially his view and experience of mining. If these improvements, or at any rate attempts to provide greater uniformity, could be established, the other points criticised, such as, what knowledge of surveying, of mechanical engineering, &c., the standard of excellence required by the various examiners might be permitted to pass, and the boards and examinations in each district continue as at present.

Coal Mines Regulation Act, 1887.

Board for Examinations for the Mining Districts of North and East Lancashire and Ireland.

Examination of Candidates for First-class Certificates of Competency, December 1894.

Instructions to Candidates.

1. During the examination the candidate must not speak to any other candidate, nor hold any communication with him, nor must he leave the room until he has completed his questions, nor then without the permission of the secretary.

2. Answers must be written on the paper supplied, and the answers must be numbered to correspond with the question. The candidate may answer any question in the order he may prefer. Answers must be written on one side of the paper only. Each sheet must be signed at the foot with the name of the candidate.

3. The paper of questions must be returned with the answers, and no candidate is allowed to take away with him a copy of the questions, or any of them.

4. Any candidate found using, or having in his possession in the examination room, a copy of the Official Abstract or Special Rules, will be disqualified.

Preliminary.

State your name, age, and address.

PART I.—Time allowed, 11 A.M. to 1 P.M.

I.—Arithmetic.	Marks.
1. If the total pressure upon a separation door is 400 lbs., when the W.G. is $2\frac{1}{2}$ inches, what is the area of the opening, and what the height of the door when its breadth is 5 feet 6 inches? - - -	3
2. The distance from an airway to an upcast pit is 76 yards, measured upon the level. What would be the length of a dumb drift out of the airway to come into the pit, at a height of $32\frac{1}{2}$ yards above it? - -	3
3. A hoppet measures 3 feet 9 inches in depth, 3 feet 6 inches diameter at top, and 2 feet 8 inches diameter at bottom. What weight of rock would it hold at 14 cubic feet per ton; or what weight of water would it hold? -	3
	9

II.—Coal Mines Regulation Act, 1887, and Special Rules.	
1. What are the general rules relating to the dimensions and securing of the various working roads in a mine? - - - - -	4
2. State shortly the manager's duties with respect to the use of safety lamps, as defined by the Special Rules of this district. - - -	4
3. What are the duties of the under-manager and fireman with respect to the provision and use of timber? - - - - - -	4
4. What is the general rule relating to the construction of safety-lamps? -	4
5. In firing a shot in a sinking pit, what is the mode of procedure before firing, and what precautions must be taken? What must be done after firing, before work is resumed? - - - - -	4
6. What are the duties of a boiler-minder or stoker as set out in the Special Rules? - - - - - - - -	4
	24

PART II.—Time allowed, 1.30 P.M. to 5.30 P.M.

III.—Practical Mechanics.	
1. What quantity of water will be delivered by a double-acting piston-pump, 2 feet 8 inches stroke, 9 inches diameter, working at 15 revolutions per minute; the pump-rod (on one side of plunger only) being 3 inches in diameter, and allowing 5 per cent. for slip? - - -	6
2. A winding engine, with drum 20 feet diameter, and two cylinders, each 30 inches diameter, and 5 feet stroke, has, during a winding, an average effective pressure of 40 lbs. per square inch; the average speed is 40 revolutions per minute. What is the horse-power, the average speed of cage, and speed of piston in feet per minute? - - - -	6

	Marks.
3. A crab has a handle 16 inches radius, and barrel 7 inches diameter; it is double-geared, with pinions 14 and 16 teeth, and wheels of 100 and 120 teeth respectively. What is the mechanical advantage? And what weight could a man lift by means of this crab and a pair of three-sheaved blocks, when exerting a force of 60 lbs. upon the handle, neglecting friction? - - - - - - -	6
4. The lever of a safety-valve is 36 inches long to the centre of the weight, and $3\frac{1}{2}$ inches from the heel or fulcrum to the valve; the valve is 4 inches diameter, and the weight 70 lbs. What is the pressure per square inch when steam begins to blow off? Weight of lever and valve not to be taken into account - - - - - - -	6
	24

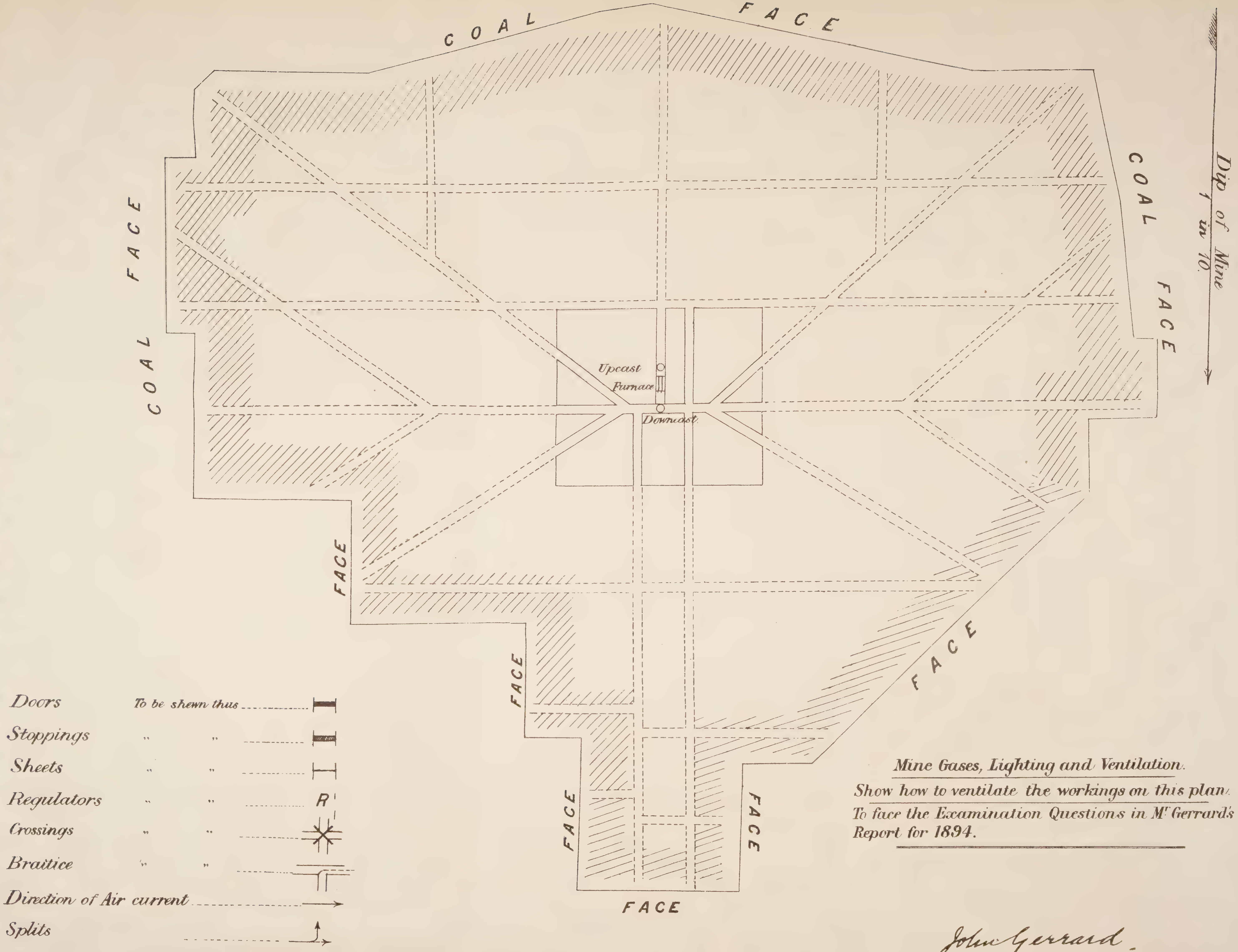
IV.—Practical Working.

	Marks.
1. State what you know about the explosive properties of coal-dust, and what precautions you would take in working a dry and dusty mine - -	6
2. Describe the means you would adopt to secure wire guides (or conductors) to the head-gear, and your arrangements for keeping the guides sufficiently rigid - - - - - - - -	6
3. Make a sketch of some method of coal working with which you are familiar, showing a main heading, and at least four working places. Show the drawing roads, packs, timbering, and mode of ventilation - -	6
4. Some underground workings are liable to take fire by spontaneous ignition. What is the reason of this? And what are the principal precautions to be taken in order to avoid danger to life in such mines? - -	6
5. Give the cases where, in your opinion, steel girders are more suitable than timber for securing roofs. Show, by a sketch, how you would fix them -	6
6. If you had an underground engine to fix, state, as clearly and as fully as you can, what precautions you would take against fire or smoke, and consequent risk to property or life, first in the erection and afterwards in the working of the engine - - - - -	6
	36

V.—Mine Gases, Lighting, and Ventilation.

	Marks.
1. What gases are given off in a coal mine from spontaneous combustion, or gob fires, from the coal itself, from lamps, and from shot firing? What are their properties and chemical compositions? - - -	4
2. A certain quantity of air is passing through an air-way; what increase of water gauge, and what increase of power would be required in order to pass 25 per cent. more air through the same air-way? - -	4
3. What rules should be followed in dividing or splitting the air-currents in a mine? What practical limits to the number of splits are imposed by considerations of efficiency and economy? - - - -	4
4. What are the four principal factors in ventilation which influence the circulation, and upon which the quantity of air circulating depends? -	4
5. Two shafts are each 900 feet deep; the barometer stands at 29·5 inches; the temperature of the downcast is 50° F., and that of the upcast 150° F.; what is the ventilating pressure? - - -	4
6. Show how to ventilate the workings on the annexed plan - - -	4
	24
Oral Examination - - - - - - - -	15
Total number of marks - - -	132

Two-thirds of the total number of marks to pass.



Mine Gases, Lighting and Ventilation.

Show how to ventilate the workings on this plan.

To face the Examination Questions in Mr. Gerrard's Report for 1894.

John Gerrard.
H. M. Inspector of Mines.

yman & Sons, Ltd. Lith. 63, Carter Lane. | 6894. 2. 35.

Coal Mines Regulation Act, 1887.

BOARD FOR EXAMINATIONS FOR THE MINING DISTRICTS OF NORTH AND EAST LANCASHIRE AND IRELAND.

EXAMINATION of CANDIDATES for SECOND CLASS CERTIFICATES of COMPETENCY, December, 1894.

Instructions to Candidates.

1. During the examination the candidate must not speak to any other candidate, nor hold any communication with him, nor must he leave the room until he has completed his questions, nor then without the permission of the secretary.

2. Answers must be written on the paper supplied, and the answers must be numbered to correspond with the question. The candidate may answer any question in the order he may prefer. Answers must be written on one side of the paper only. Each sheet must be signed at the foot with the name of the candidate.

3. The paper of questions must be returned with the answers, and no candidate is allowed to take away with him a copy of the questions or any of them.

4. Any candidate found using, or having in his possession in the examination room, a copy of the Official Abstract or Special Rules will be disqualified.

Preliminary.

State your name, age, and address.

PART I.—Time allowed, 11 a.m. to 1 p.m.

I.—Arithmetic.	Marks.
1. How many cubic inches are contained in a box 2 feet 5 inches long, 1 foot 2 inches wide, and $6\frac{1}{2}$ inches deep?	3
2. What are the weekly wages of a collier who gets 24 tons 6 cwts. of coal at 1*s.* $9\frac{1}{2}$*d.* per ton, and is paid for 4 yards of driving at 3*s.* 3*d.* per yard, after paying his drawer 5 days' wages a 4*s.* 10*d.* per day?	3
3. Add 273*l.* 19*s.* 6*d.*, 6*l.* 13*s.* $2\frac{1}{2}$*d.*, and twenty-eight pounds seventeen shillings and fourpence together; subtract 154*l.* 2*s.* 8*d.* from the total, and divide the remainder by thirteen	3
4. How many four-feet rails are required to lay a tramway 120 yards long; what is their weight in cwt. qrs. lbs., at 16 lbs. to the yard?	3
	12

II.—Coal Mines Regulation Act, 1887, and Special Rules.	
1. In addition to the examination of safety lamps required by General Rule 10, what is laid down in the special rules of this district as to examinations by the fireman?	4
2. What are the duties of the banksman of a sinking pit respecting the banking waggon, the hoppet or tub, and the sending down of materials?	4
3. If a shot misses fire, what ought to be done (*a*) if an electric battery has been used, (*b*) if other means of firing have been used?	4
4. What is the duty of the fireman in case he finds on his examination that any part of the mine is unsafe?	4
5. What precautions do the Act and Special Rules require to be taken upon approaching old workings suspected to contain gas or water?	4
6. State fully the provisions of the general and special rules with regard to propping and spragging.	4
	24

PART II.—Time allowed, 1.30 p.m. to 5.30 p.m.

III.—Practical Working of Mines.	Marks.
1. What are the chief causes of boiler explosions? - - - - -	6
2. What are the principal causes of accidents in mines? Give shortly the precautions necessary to avoid them - - - - -	6
3. What are the signs generally observed in the working faces when approaching old workings? - - - - - - -	6
4. When a pump loses its water, what do you look for, and how do remedy the defect? What is the maximum height that a pump can be fixed above the level of the water to be pumped? - - - - -	6
5. How would you proceed to draw the timber in an abandoned working? What precaution would you take? - - - - -	6
6. Give a sketch, with figured dimensions, of a bricking scaffold, suitable and safe for a 13-feet shaft - - - - - -	6
	36
IV.—Mine Gases, Lighting, and Ventilation.	
1. Describe the water-gauge, and say of what use it is. What conclusion would you come to if you found the water-gauge much higher or lower than usual? - - - - - - - -	4
2. A separation door is 5 feet 9 inches square; the water-gauge indicates 2·75 inches; what is the total pressure upon the door? - - -	4
3. A quantity of gas occupies a space of 20,350 cubic feet with the barometer standing at 30 inches. How would this volume of gas be affected by a fall of 1 inch in the barometer? - - - - -	4
4. How would you detect the presence of fire-damp, and how would you estimate the proportion of gas present? Describe how you would search for this gas in a drawing road and in a working place - - -	4
5. What method would you adopt to remove an accumulation of fire-damp from a working place? - - - - - - -	4
6. Shew how you would ventilate the workings on the annexed plan -	4
	24
Oral Examination - - - - - - -	18
Total number of marks - - -	114

Two-thirds of the total number of marks to pass.

LIST OF FATAL ACCIDENTS IN THE DISTRICT.

COAL MINES.—NORTH AND EAST LANCASHIRE.

LIST of the FATAL ACCIDENTS, and DEATHS arising therefrom within one YEAR and a DAY from the DATE of the ACCIDENT, in NORTH AND EAST LANCASHIRE during the year 1894.

No. of Accident.	Date.	Hour.	Hour of the Person's Shift.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Name of the Person killed.	Age.	Occupation.	Remarks upon cause of Death.	No. of Lives lost.
						BELOW GROUND.—49. (50 DEATHS.)					
						EXPLOSIONS OF FIREDAMP.—1.					
1	Aug. 8	5 p.m.	2	Bank House	Oldham	Oldham, Middleton, and Rochdale Coal Co., Limited.	James Henthorn	32	Shotlighter	After examining place, and finding gas, recklessly proceeded to light a shot, and lit the gas. Died on the 10th.	1
						FALLS OF SIDE.—7.					
2	Feb. 23	2 p.m.	8	No. 2 Hewlett	Westhoughton	Wigan Coal and Iron Co.	Peter Bromelow	47	Collier	Standing before overhanging coal, trying to get it down, when it fell on to him; piece of coal 7 ft. 6 in. long overhung a foot at top. Been ordered to work at the end.	1
3	Mar. 1	7 a.m.	1	Ladyshore	Little Lever	John Fletcher	Laurence Staunton	52	"	Fall of coal from face, came over short sprags, wanted long rearing sprag. Deceased was preparing a hole in floor to set one.	1
4	" 15	10.30 a.m.	5	Moston	Moston	Platt Bros. & Co., Limited.	Richard Shaw	31	"	Fall of coal from face, overhanging. Deceased had tried to get it down; should either have persevered or spragged it.	1
5	Aug. 27	7 a.m.	1	Newtown No. 2	Swinton	Clifton and Kersley Coal Co., Limited.	William Greenhalgh.	60	"	Fall of coal from face. In pulling down the coal, he slipped, fell over loose coal; some of the face coal fell on his legs. Died October 3rd.	1
6	Nov. 7	12 noon	6	Darcy Lever	Bolton	Darcy Lever Coal Co.	William Booth	49	Filler	Fall of coal from face of working place knocked out a prop under jinny frame; prop struck deceased. Fall came away from a break.	1
7	" 16	10.30 a.m.	4	Linnyshaw	Worsley	Bridgewater Trustees	Robert Warne	44	Collier	Fall from side in haulage road whilst setting bars. The side overhung, and ought to have been pulled down.	1

LIST of the FATAL ACCIDENTS in NORTH and EAST LANCASHIRE—*continued.*

No. of Acci-dent.	Date.	Hour.	Hour of the Person's Shift.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Name of the Person killed.	Age.	Occupation.	Remarks upon cause of Death.	No. of Lives lost.
						FALLS OF SIDE—*continued.*					
8	Dec. 24	10 a.m.	4	Hewlett No. 2	Westhoughton	Wigan Coal and Iron Co., Limited.	William Isherwood	42	Collier	Fall of overhanging "ley" from face; ought to have been pulled down. Had been trying to get it down, yet stood before it, when it fell and struck him on the back.	1
						FALLS OF ROOF.—26.					
9	Jan. 11	1.45 p.m.	7	Nook	Tyldesley	Astley and Tyldesley Coal Co., Limited.	Thomas Ellison	24	,,	Fall of roof in waste. Taking out back prop alone, stone came from a pronounced break, 6 feet long, 6 feet wide × 2 feet thick.	1
10	Feb. 28	11.30 p.m.	6	Manor	Kersley	Clifton and Kersley Coal C., Limited.	James Wooley	32	Dataller	Fall of roof in drawing road from clearly defined, well-known slip; ought to have been pulled down. Died 4th April.	1
11	April 10	2.30 p.m.	10	Rishton	Blackburn	P. W. Pickup	Jonathan Taylor	26	Fireman	Knocked out six props in great haste, without listening or pausing between. A sudden weight came on, roof fell many yards in length, 6 feet wide 4 feet thick. In the waste of the working place.	1
12	,, 11	10.30 a.m.	5	Mosley Common	Worsley	Bridgewater Trustees	Thomas Kavanagh	36	Collier	Knocking props out from under top coal; standing under the coal instead of under the roof when the props fell, a quantity of the coal fell on to him, over two props. Fall 7 feet × 7 feet × 15 inches thick.	1
13	,, 20	12 noon	5	Bridgewater	Worsley	,, ,,	William Lord	43	,,	Small piece of roof, 8 to 10 lbs. weight, fell 4 feet on to his foot, cut toe. Worked up to 7th May. Mortification and blood-poisoning caused death on 15th May.	1
14	May 25	8.30 a.m.	2	Bankhouse	Shaw	O. M. and R. Coal Co., Limited.	Thomas Hilton	20	,,	Fall of roof from two pronounced slips; ought to have been propped; want of direction on the part of fireman.	1
15	June 5	1.30 p.m.	7	Woodpark	Ashton-under-Lyne.	Chamber Coll. Co., Limited.	Simeon Andrew	41	,,	Fall of roof in working-place; reckless neglect to set timber.	1
16	,, 6	2 p.m.	8	oSfield ctk	Oldham	,, ,,	John Smith	24	,,	Fall of roof coals, which ought to have been pulled down, at top of jig-brow.	1
17	,, 15	7 a.m.	1	Stopes	Little Lever	Thos. Fletcher & Sons	Walter Lyddall	52	,,	Fall of roof in working place from clearly pronounced slips; large area without support.	1

LIST of the FATAL ACCIDENTS in NORTH and EAST LANCASHIRE—*continued.*

No. of Acci-dent.	Date.	Hour.	Hour of the Person's Shift.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Name of the Person killed.	Age.	Occupation.	Remarks upon cause of Death.	No. of Lives lost.
						FALLS OF ROOF—*continued.*					
18	June 23	3.20 a.m.	7	Outwood	Pilkington	Thos. Fletcher & Son	Nicholas Harry Jackson.	24	Collier	Fall of roof in working place whilst taking out a prop; want of care and protecting props.	1
19	„ 25	3.20 p.m.	9	Ashtonsfield	Little Hulton	Bridgewater Trustees	William Johnson	24	„	Fall of roof from slip seen and roof known to be bad. "We'll fill this tub and then go."	1
20	July 10	3 p.m.	9	Peelwood	Tyldesley	Tyldesley Coal Co., Limited.	Ralph Carr	53	„	Fall of roof coal from a pronounced slip, which had been seen. Died 19th.	1
21	„ 20	12.30 p.m.	6	Rose Hill	Bolton	S. Scowcroft & Sons	Joseph Smith	36	„	Fall of roof in working place from slips, pronounced and seen. Insufficient props.	1
22	July 26	10 a.m.	4	Burnt Hills	Burnley	Executors, Colonel Hargreaves.	William Hall	21	„	Fall of roof in working-place from between two faults	1
23	Aug. 16	11 p.m.	3	Nook	Tyldesley	Astley and Tyldesley Coal and Salt Co., Limited.	Edward Baxendale	35	„	Fall of roof in engine-plane, neglect to examine after taking off quantity of coal from the side which freed the stone.	1
24	Aug. 24	9.15 a.m.	3	Denton	Denton	Denton Coal Co.	William Andrew	32	„	Fall of roof in working place from horse-back well-known to be there. Gross recklessness.	1
25	Sept. 6	8 a.m.	2	Duxbury Park	Chorley	Duxbury Park Colliery Co.	Francis Adshead	31	Prop-drawer	Fall of roof in roadway whilst loosening a prop from slips all round, which had not been seen.	1
26	„ 14	11 a.m.	5	Newton, No. 1.	Swinton	Clifton and Kersley Coal Co., Limited.	Robert Holt	24	Collier	Hit by prop, knocked out by fall of roof in working-place.	1
27	Oct. 12	10 a.m.	4	Peel Hall	Little Hulton	James Roscoe and Sons.	Joseph Sykes	29	„	Fall of roof in gateway whilst drawing a prop. Died 21st.	1
28	„ 19	10.30 a.m.	5	Ellesmere	Worsley	Bridgewater Trustees	James Tonge	53	„	Fall of roof in working-place from pothole, which ought to have been seen and supported.	1
29	„ 24	11.15 a.m.	6	Moorfields	Accrington	Altham Coal Co.	James Haworth	31	„	Fall of roof in working-place from pronounced slips, known to be there; utter want of props.	1
30	Dec. 5	2.15 p.m.	10	Newtown, No. 2	Swinton	Clifton and Kersley Coal Co., Limited.	William Jones	47	Dataller	Fall of overhanging "caunch" in roadway; ought to have been propped.	1
31	„ 13	7.30 a.m.	1	Sovereign	Leigh	Wigan Coal and Iron Co., Limited.	William Arthur Mills.	34	„	Fall of roof in drawing road, after drawing a prop; large fall from between two faults; ought to have been barred.	1

LIST of the FATAL ACCIDENTS in NORTH and EAST LANCASHIRE—*continued.*

No. of Accident.	Date.	Hour.	Hour of the Person's Shift.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Name of the Person killed.	Age.	Occupation.	Remarks upon cause of Death.	No. of Lives lost.
						FALLS OF ROOF—*continued.*					
32	Dec. 26	1.30 p.m.	8	Bower - -	Hollinwood -	W. and R. Marland -	William Andrew -	67	Dataller - -	Fall of roof in roadway, from where a prop had just been drawn; ought to have been examined.	1
33	" 28	10.45 p.m.	2	Ashtonsfield -	Little Hulton -	Bridgewater Trustees	George Garnet -	39	" -	Fall of overhanging roof at side of roadway; unsupported.	1
34	" 31	11 a.m.	5	Eatock - -	Westhoughton -	Wigan Coal and Iron Co., Limited.	John Dootson -	60	" -	Fall of roof from slips and weight breaks, known to be there, after taking out a prop ordered by the fireman not to be taken.	1
						IN SHAFTS.—5.					
						FALLING FROM PART WAY DOWN.					
35	May 29	6.10 a.m.	1	Ashton Moss -	Ashton-under-Lyne.	Moss Colliery Co., Limited.	James Morris -	18	Waggoner -	Fell from intermediate mouthing whilst stepping from cage.	1
						MISCELLANEOUS.					
36	Jan. 17	3.15 p.m.	11	Scot Lane - -	Blackrod - -	William Woods and Son.	George Benson -	72	Furnaceman -	Crushed by cage at bottom of shaft. For some unknown reason he was crossing the shaft whilst cage descending, supposed to be during absence of mind.	1
37	May 10	5.30 p.m.	1	Peel Hall - -	Little Hulton -	Jas. Roscoe and Sons.	Richard Lane -	39	Sinker - -	Crushed by cage when getting in at intermediate mouthing. Engine crept away owing to break not being secure.	1
38	Aug. 23	6.20 p.m.	1	Pendleton - -	Pendleton -	A. Knowles and Sons, Limited.	Robert Bertram and William Lomax.	38 45	Day man - - Hooker-on -	New balance scaffold at bottom of shaft was being adjusted, Lomax stepped on the scaffold, which tilted, and in falling he grabbed Bertram by the legs, pulling him into the shaft, both fell to the bottom, 22 feet.	1
39	Dec. 11	5.45 a.m.	1	Alkrington - -	Middleton -	Chamber Colliery Co., Limited.	Herbert Hodgson	14	Pony-driver -	Crushed by cage at top of shaft when about to go down; unknown to banksman he was stepping into cage when engineman lowered it, owing to misunderstanding banksman.	1

LIST of the FATAL ACCIDENTS in NORTH and EAST LANCASHIRE—*continued.*

No. of Accident.	Date.	Hour.	Hour of the Person's Shift.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Name of the Person killed.	Age.	Occupation.	Remarks upon cause of Death.	No. of Lives lost.
					MISCELLANEOUS UNDERGROUND.—10.						
					BY EXPLOSIVES.						
40	May 1	8 p.m.	5	Chanters - -	Atherton - -	Fletcher, Burrows, & Co., Limited.	Robert Benson -	28	Tunneler -	Explosion of powder prematurely; assisting fireman to fire four shots in face of tunnel, fireman recklessly stayed lighting the fourth shot until one of the shots exploded, when they were only 6 yards away. Died on the 5th.	1
					ON INCLINED AND ENGINE PLANES.						
41	Jan. 5	12 noon	6	Brackley - -	Middle Hulton -	Bridgewater Trustees	Joseph Rudd -	21	Waggoner -	Crushed by tub left standing in inclined road with sprag behind; deceased disturbed it to allow him to take his tub down the road; the disturbed tub crept away and ran into him when 20 yards down.	1
42	Mar. 20	2.30 p.m.	9	Duxbury Park -	Chorley -	Duxbury Park Colliery Co., Limited.	Michael Anton -	50	Ganger -	Crushed by tub, coupling between 1st and 2nd tub of a train of eleven became detached. Deceased was walking before the train, supposed the first tub bounded forward on becoming uncoupled, and struck him. It would be easy to understand had he been riding, but he was never known to ride. He was found between the rails and about 3 feet in front of the tub.	1
43	„ 22	12 noon	6	Agecroft - -	Pendleton -	A. Knowles and Sons, Limited.	Ralph Gorton	24	Drawer - -	Struck by chain end of rope, a full tub attached to other end of rope, and on a windlass, the full tub overpowered deceased, and ran down brow 51 yards, drawing up the other end of rope, which was free, at great speed. Died from fractured skull on 25th.	1
44	July 17	11 a.m.	5	Broad Oak - -	Ashton-under-Lyne.	Broad Oak Colliery Co., Limited.	Edwin Marland -	36	Fireman -	Whilst a train of empties being lowered down engine brow by break to drum break, strap broke. Uncontrolled the train ran away with the rope which came off the drum. The brow inclination, 1 in 2. The rope went down the brow some distance, caught deceased who was sliding on one of the rails after the train.	1

LIST of the FATAL ACCIDENTS in NORTH and EAST LANCASHIRE—*continued.*

No. of Accident.	Date.	Hour.	Hour of the Person's Shift.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Name of the Person killed.	Age.	Occupation.	Remarks upon cause of Death.	No. of Lives lost.
					MISCELLANEOUS UNDERGROUND—*continued.*						
45	Oct. 16	8 a.m.	2	Mosley Common -	Worsley -	Bridgewater Trustees	Walter Wolstenholme.	13	Door-tenter -	Crushed by tub, ran away in incline - - -	1
46	Nov. 13	2 a.m.	8	Clifton - -	Burnley -	Executors of Colonel Hargreaves.	John Hirst - -	32	Drawer - -	Crushed by tub, ran back on endless chain road -	1
47	Dec. 20	2.45 a.m.	8	Manor - -	Kersley -	Clifton and Kersley Coal Co., Limited.	Robert Pearson Platt.	18	Waggoner -	Crushed by tub at bottom of jig brow - - -	1
					BY MACHINERY.						
48	Sept. 17	12.25 p.m.	6	Bank Hall - -	Burnley -	Executors of Colonel Hargreaves.	Joseph Berry -	50	Dataller - -	Crushed by endless chain wheel, standing inside the chain, despite the under-manager's orders to stand back; he was attempting to put the wheel out of gear, was caught by chain and carried round wheel.	1
					ROPES AND CHAINS BREAKING.						
49	Feb. 2	7.15 a.m.	1	Spindlepoint - -	Kersley -	Clifton and Kersley Coal Co., Limited.	Thomas Kay -	13	Drawer - -	Crushed by tubs; had just put drag behind the last of ten tubs, whilst they were being drawn out of shunt in down brow. Link next to swivel at end of rope broke, tubs ran back 11 yards, over deceased had no business there.	1
					ON SURFACE.						
					RAILWAYS AND TRAMWAYS.						
50	Nov. 7	3.50 p.m.	[illegible]	Nook - -	Tyldesley -	Astley and Tyldesley Coal Co., Limited.	Thomas McCormack.	14	Coal cleaner -	Run over by waggons; supposed to have been attempting to get on to ride. Had been warned previously not to ride on the waggons. He was 80 yards from the screens where his work lay.	1

Metalliferous Mines—Ireland.

No. of Accident.	Date.	Hour.	Hour of the Person's Shift.	Name of the Mine or Colliery.	Where situate.	Name of the Owner or Company.	Name of the Person killed.	Age.	Occupation.	Remarks upon cause of Death.	No. of Lives lost.
						On Surface.					
1	Sept. 3 -	8.50 a.m.	2	Tennant - - -	Carrickfergus -	Chemical Salt Co., Limited.	Andrew Robinson	20	Labourer - -	Crushed by salt rock crusher on surface. Was tying his boot lace, his foot on a ledge of wood near the opening to the rollers forming the crusher; his foot slipped and passed through the opening, foot and leg being dreadfully crushed; the opening was 6 inches wide by 2 feet long.	1

DEATHS NOT COMPRISED WITHIN THE ACTS.

February 12th, Richard Hulton, stoker at gasworks, John Dalton, visitor, injured by bricks falling through roof of gas-house, from colliery chimney struck by lightning. A shaftman in the pumping shaft felt shock, two men at shaft bottom also, and saw blue flash, engineman 25 yards from shaft bottom felt shock.

February 22nd, William Chadwick, surface labourer, died whilst walking from a waggon, at the Hulton Colliery.

February 26th, Edward Pugh, 50, employed as banksman at the Gin Pit of the Astley and Tyldesley Coal Company, whilst sat on the pit bank waiting before commencing work, fell forward dead from natural causes.

February 26th, Peter Valentine, 58, dataller, taken ill whilst at work underground at Scot Lane Colliery, and died immediately. From natural causes.

April 7th, Elias Wilkinson, 24, employed as a blacksmith at Towneley Colliery; had left the colliery premises and entered on the Lancashire and Yorkshire Railway, when he was struck by locomotive passenger engine and killed.

April 9th, William Rutter, 26, collier, died whilst at the face underground, at the Ellerbeck Colliery. From natural causes.

April 10th, John Weston, foreman excavator, killed at the bottom of a shaft being sunk by the Oldham Corporation in connexion with their sewerage works. The banksman to land the skip had to pull it to the side of the shaft; in doing so a large stone fell from the skip down the shaft on to deceased. A simple fall table or running bogey or bridge would have rendered the operation safe.

May 10th, Lewis Barton, 55, fitter, fell from engine pillar in winding-engine house at Chisnall Hall Colliery, not in the employ of the colliery firm. Jury returned verdict of accidental death.

July 2nd, John Platt, 33, collier, was found dead in the roadway leading to his working place in the Brackley Colliery, had travelled 1,850 yards, not commenced work; at the inquest it was found he had died from natural causes.

On July 5th, William Smith, 28, labourer, killed and three others injured by an explosion of firedamp at the top of a shaft being sunk by the Oldham Corporation, in connexion with their sewerage works. A small furnace had been built and wooden pipes carried down to the bottom of the shaft to draw off the firedamp. The firedamp was drawn off, and naturally lit at the furnace.

On July 11th, Henry Morris, 14, tub-cleaner at surface, employed at the Priestners Pit, was taken ill at the colliery and died. At the inquest it was found that he died from natural causes.

On August 7th, John Warrington, 55, labourer, whilst employed on the surface at Pendleton Colliery, died from natural causes.

On August 11th, Willoughby Yates, 36, collier, died at the Royal Infirmary, Manchester. At the inquest held at Coroner's Court, Manchester, the following evidence was given :—*Annie Yates* said the deceased was her husband, a collier, worked down the pit, died on the 11th instant at the Royal Infirmary. He worked for the Bridgewater Trustees at Linnyshaw Pit. He was injured on or about the 15th of April, down the pit. He walked home by himself. He complained that he had been lifting a tub and hurt himself across the stomach. He did not blame anyone. He said James Owen was working with him at the time. It was a day or two before they got a doctor. If he worked after it was only a day or two. He began to be very bad in a few days, and a doctor was called in who attended him until the day he was taken to the infirmary, on Wednesday last week, August 8th. Dr. Martin recommended him to go to the infirmary. *James Owen*, stated: "Am a collier. I was working with "deceased when he strained himself on the 18th of April. He was lifting a waggon of dirt "over to empty it. It would be 9 cwt. He had often done it before. He called 'Oh! Jim, "'come here I have hurt me.' I went to him, he said it had catched him across the bottom "of his belly and his back. He tried to continue on at work and stopped about two hours. "He played a few days, then worked three days and then no more."

At this point the coroner observed that it seemed a clear case of accidental death. Fortunately a medical man from the infirmary now came and stated that he made an examination of Yates when admitted, found he was very ill, suffering from abdominal distension. He died on the morning of the 11th. A postmortem was made; the intestines were found matted together from peritonitis—"signomflexure." A large cancerous growth causing

stricture of the gut. The glands behind were all affected. All other organs were healthy. Cause of death was exhaustion. It would take at least several months for the cancerous growth. It would not be caused by a strain last April, though it probably might not have given pain until that moment when turning the tub, but in his opinion that did not affect it.

The jury at once returned a verdict of death from natural causes.

On November 17th, Charles Nash, 33, quarryman, killed by fall of side in the Whitegate Quarry. Verdict, accidental death.

On December 4th, Thomas Robert, 65, collier, whilst at work in the Bradley Fold Colliery, died from natural causes.

In all the above cases of natural death the places were inspected, and in the other cases the cause fully investigated.

The following prosecutions have been reported during the year 1894, in accordance with section 66 of the Coal Mines Regulation Act, 1887:—

Date of Hearing.	Occupation of Offender.	Name of Owner of Colliery.	Nature of Offence, with Rules violated.	Amount. Fine.	Amount. Costs.
Feb. 13 -	Fireman -	Lower Darwen Coal Co.	Neglecting to visit the workpersons during the shift. Special Rule 29.	10*s.*	11*s.* 6*d.*
" " -	Ditto - -	Ditto - -	Ditto ditto	10*s.*	11*s.* 6*d.*
Mar. 5 - -	Collier - -	William Woods & Sons.	Unramming explosive. General Rule 12 (*e*).	5*s.*	1*l.* 3*s.*
" 19 -	Shot-lighter -	Darcy Lever Coal Co.	Having his safety lamp unlocked. Special Rule 60.	10*s.*	10*s.*
" " -	Daywageman -	Ditto - -	Having in his possession a key for unlocking safety lamps. Special Rule 60.	10*s.*	10*s.*
" 21 -	Ditto - -	Broad Oak Colliery Co.	Unlocking, opening, and lighting his safety lamp. General Rule 10. Special Rules, 65, 151, 152.	1*l.*	11*s.*
April 5 -	Collier - -	Thos. Fletcher & Sons	Going into a part of the workings other than was necessary in going to and from his work. Special Rule 44.	10*s.*	1*l.* 5*s.*
" 17 -	Ditto - -	Blainscough Colliery Co., Limited.	Neglecting to set sprags. Special Rule 48.	1*l.*	11*s.*
May 3 - -	Machinery inspector.	Wigan Coal and Iron Co., Limited.	Being on the works intoxicated. Special Rule 148.	1*l.*	19*s.*
" " -	Blacksmith -	Ditto - -	Ditto ditto	1*l.*	15*s.*
" " -	Carpenter -	Ditto - -	Ditto ditto	1*l.*	15*s.*
" " -	Labourer -	Ditto - -	Ditto ditto	1*l.*	15*s.*
June 12 -	Collier - -	Blainscough Colliery Co., Limited.	Neglecting to set sprags. Special Rule 48.	1*l.* 1*s.*	11*s.*
July 5 -	Ditto - -	Chamber Colliery Co., Limited.	Neglecting to set props. General Rule 22.	5*s.*	6*s.* 6*d.*
" 25 -	Ditto - -	Oldham, Middleton, and Rochdale Coal Co., Limited.	Striking a match in the mine. Special Rule 70.	1*l.*	12*s.*
" 26 -	Steam winch minder.	George Hargreaves & Co.	Having a pipe and matches in his possession in the mine. Special Rule 70.	10*s.*	16*s.*
Aug. 16 -	Four banksmen -	Andrew Knowles & Sons, Ltd.	Leaving their posts before the men and boys were out of the pit. Special Rule 128.	10*s.* each	11*s.* 6*d.* each
" 29 -	Collier - -	Oldham, Middleton, and Rochdale Coal Co., Limited.	Neglecting to report the presence of gas in his working place. Special Rules 56, 57.	1*l.*	12*s.*
Sept. 4 -	Chargeman -	Blainscough Colliery Co., Limited.	Neglecting to examine the sinking shaft after shotfiring. Special Rule 140.	1*l.*	1*l.* 1*s.* 6*d.*
" " -	Ditto - -	Ditto - -	Neglecting to use safety lamps where ordered. Special Rule 141.	1*l.*	1*l.* 1*s.* 6*d.*
" 5 -	Three firemen -	Chamber Colliery Co., Limited.	Having in their possession a naked light where safety lamps were required to be used. Special Rules 60, 61.	1*l.* each	12*s.* each

Date of Hearing.	Occupation of Offender.	Name of Owner of Colliery.	Nature of Offence, with Rules violated.	Amount. Fine.	Costs.
Sept. 17 -	Collier - -	Andrew Knowles & Sons, Limited.	Neglecting to set sprags. Special Rule 48.	5s.	10s.
Oct. 11 -	Ditto - -	Ditto -	Stuck his lamp shield in three pieces whilst holing.	Case dismissed.	
Nov. 6 -	Ditto - -	Joseph Dobbs, Rock Colliery, Castlecomer.	Unramming explosive. General Rule 12 (*e*).	5s.	2s. 6d.
" " -	Ditto - -	Ditto - -	Ditto ditto	5s.	2s.
" 8 -	Dataller - -	Altham Colliery Co. -	Neglecting to report the presence of gas in his working place. Special Rule 56.	1l.	11s. 6d.
" " -	Collier - -	Ditto - -	Neglecting to examine his working place before commencing and whilst at work. Special Rule 46.	1l.	11s. 6d.

In addition to the foregoing prosecutions, at your direction the following proceedings were taken :—

Date of Hearing.	Occupation of Person proceeded against.	Name of Colliery.	Nature of Offence.	Result.
1894. March 19 -	Owner - -	Daubhill -	6 Section Coal Mines Act, not giving notice of commencement of mine.	Convicted to pay 2l. 18s. 6d.
" -	" - -	" -	16 Section Coal Mines Act, no second outlet.	Convicted to pay 1l.
" -	" - -	" -	33 Section Coal Mines Act, not making annual return.	Convicted to pay 1l.
" -	" - -	" -	49 Section Coal Mines Act, General Rule 4, no reports as to condition of mine.	Convicted to pay 1l.
" -	" - -	" -	57 Section Coal Mines Act, not posting copy of Act at the mine.	Convicted to pay 1l.
September 26 -	Manager - -	Bankhouse -	49 Section Coal Mines Act, 1st General Rule, not providing adequate ventilation.	Dismissed.

LIST OF ABANDONED MINES FOR 1894.

Name of Mine.	Name of Owner.	Where situate.		Minerals worked, and, in the case of Coal, Name of Seam.	Date of Abandonment.
		Parish.	Post Town.		
		LANCASTER.			
Arley Hall -	Geo. Adamson and Sons.	Blackrod -	Chorley	Coal—Cockloft seam -	11 Aug. 1894.
Bar Gap -	John Kay & Jos. Buckley.	Oldham -	Oldham -	" Big Mine -	October 1894.
Bent Hill -	John Maden and Sons.	Cliviger -	Bacup -	" Lower Gannister.	" 1893.
Brearley -	Joseph Brierley.	Rochdale - -	Littlebro' -	" Mountain Mine	Nov. 1893.
Clapgate -	Messrs. J. A. & J. H. Rawstron.	Do. -	Norden -	" Sandrock "	February 1893.
Hagside and Bank Top.	A. Knowles and Sons, Ltd.	Radcliffe - -	Manchester	" Cannel or Hynes	16 Sept. 1893.
Higher Shore	Messrs. E. Clegg and Son.	Blatchinworth and Calderbrook.	Littlebro' -	" Forty Yards Mine.	8 March 1894.
Do. -	Do. - -	Do. - -	Do. - -	" Little Mine -	9 " "
Hyndburn Bridge	Ed. Pilkington.	Clayton-le-Moors	Accrington	" Arley " -	9 May 1894.
Lane Foot -	Mr. E. D. Hartley and representatives, late Stephen Hartley.	Rochdale - -	Littleboro -	" Little " -	17 Jan. 1894.
Longacres -	John Lord and Son.	Do. - -	Facit -	" Sandrock Mine	May 1894.
Markland -	W. Brown and Son.	Blackrod -	Chorley -	" Bone Coal "	July 1894.
Peel Hall -	Jas. Roscoe and Sons.	Bolton -	Bolton -	" Black and White	24 Nov. 1893.
Thornlee -	The Lancashire Firebrick Co., Ltd.	Ashton - under-Lyne.	Oldham -	Higher Mine Fireclay	17 Aug. 1894.
		IRELAND.			
Arigna -	Arigna Mining Co., Ltd.	Kilronan -	Carrick-on-Shannon.	Coal—Main Coal -	7 Jan. 1894.
Gabbarudda	Mrs. Walsh -	Do. - -	Do. - -	" Unknown -	May 1892.
Lisnamrock, No. 4.	George Langley	Ballingarray -	Thurles -	" Lisnamrock -	6 Dec. 1893.
Do. No. 8.	Do. - -	Do. - -	Do. - -	" Top Seam -	14 May 1894.
Do. No. 9.	Do. - -	Do. - -	Do. - -	" Lisnamrock -	29 Sept. 1894.

In conclusion several complaints have been received during the year, which have had full investigation.

I have again to thank those owners who contributed to the accuracy of the value of the minerals by giving their individual values for collective use.

I have the honour to be,
Sir,
Your obedient servant,
JOHN GERRARD.

The Right Honourable
H. H. Asquith, Q.C., M.P.,
Her Majesty's Principal Secretary of State,
Home Office, Whitehall.

Kersal Bank, Higher Broughton, Manchester,
February 13, 1895.

Sir,

In accordance with the Metalliferous Mines Regulation Act, 1872, I have the honour to report that during the year 1894 I acted as an Inspector of Mines in the district of North and East Lancashire, and Ireland, under the direction of Mr. Gerrard, the Chief Inspector.

I also acted in the same district and under the same direction under the Coal Mines Regulation Act, 1887.

I have the honour to be,
Sir,
Your obedient Servant,
WILLIAM SAINT.

The Right Honourable
Herbert H. Asquith, Q.C., M.P., &c.,
Her Majesty's Secretary of State,
Home Office, Whitehall,
London, S.W.

278, Worsley Road, Swinton, Manchester,
February 13, 1895.

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Your obedient Servant,
GEO. B. HARRISON.

The Right Honourable
Herbert H. Asquith, Q.C., M.P., &c.,
Her Majesty's Secretary of State,
Home Office, Whitehall,
London, S.W.

BIBL. LONDIN.